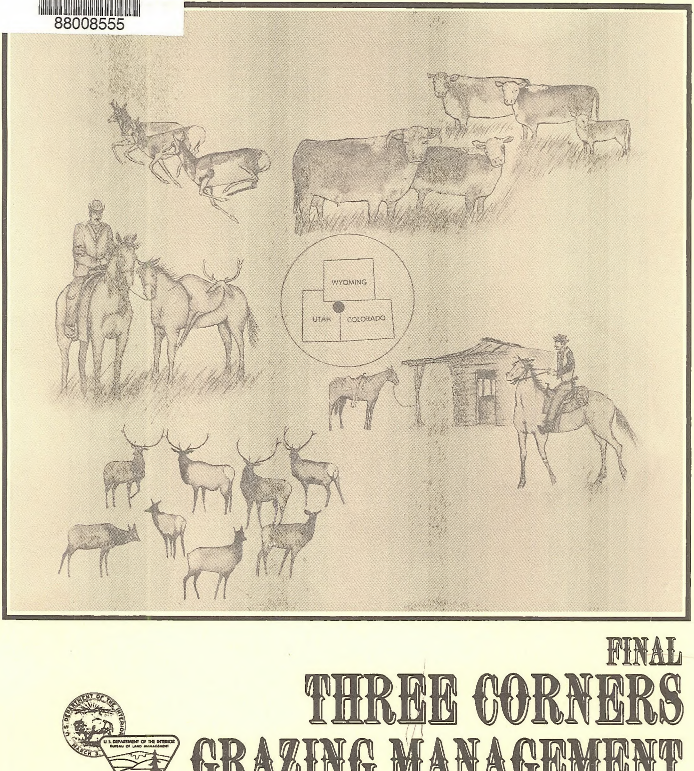
BLM LIBRARY
88008555



FINAL
THREE CORNERS GRAZING MANAGEMENT ENVIRONMENTAL STATEMENT

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

5F
35.35
.W47
T48
1979b

IN REPLY REFER TO

March 3 1849

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
VERNAL DISTRICT OFFICE
170 South 500 East
Vernal, Utah 84078

September 21, 1979

Dear Reader:

Enclosed is a copy of the Final Three Corners Grazing Management Environmental Statement. The final statement contains the statement summary, the completed Chapter 9, and an addendum section which contains pages on which changes were made in the draft.

This final environmental statement (FES) was prepared using the comments received through the public review process on the draft environmental statement. The FES is a departure from the usual procedure of completely reprinting the draft statement with changes and modifications based on public input. Because the changes suggested through the public review process did not require a major rewrite of the draft, substantial cost saving could be realized by reprinting only the responses to comments and the corrections and modifications. Thus, this document must be used in conjunction with the draft environmental statement which was distributed to the public on June 15, 1979.

The final environmental statement is not the decision document. The decision on the action to be taken will be based on the analysis contained in the FES, BLM's manpower and budget constraints, public concerns and comments, and other multiple-use resource objectives or programs applicable on the area. No action can be taken for at least 30 days following filing of the final statement with the Environmental Protection Agency (9/28/79) and distribution to the public. A brief summary document that outlines the management direction for the Three Corners area will be prepared and made available as soon as a decision is reached. More specific decisions will subsequently be developed on an allotment-by-allotment basis.

Sincerely yours,

Lloyd H Ferguson

Lloyd H. Ferguson
District Manager

Errata note: Error, page 2-19 & 2-20 in the draft, was perpetuated in the final. Please note that the dates on the photos are reversed.

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

88008555

SF
85.35
.W47
T48
1978b

BLM Library
D-553A, Building 50
Denver Federal Center
P. O. Box 25047
Denver, CO 80225-0047

DEPARTMENT OF THE INTERIOR

FINAL
ENVIRONMENTAL STATEMENT

THREE CORNERS
GRAZING MANAGEMENT

Prepared by

BUREAU OF LAND MANAGEMENT
DEPARTMENT OF THE INTERIOR

Frank Gregg

Director, Bureau of Land Management

SUMMARY

( ) Draft (X) Final Environmental Statement

Department of the Interior, Bureau of Land Management

1. Type of Action (X) Administrative ( ) Legislative

2. Brief Description of Action: The Three Corners Planning Unit is in the northeast corner of Utah, approximately 20 miles north of Vernal, Utah and approximately 45 miles south of Rock Springs, Wyoming. It encompasses 190,536 acres of public land, 85 percent of which is in Utah and 15 percent in Colorado (see attached figure).

The proposed action is to initially allocate the following animal unit months (AUMs) of forage: 15,788 for cattle; 3,655 for sheep; 9,684 for deer; 4,838 for elk; and 378 for antelope. In 15 to 20 years the proposed allocation of AUMs would be: 16,174 for cattle; 3,259 for sheep; 10,299 for deer; 6,091 for elk; and 380 for antelope. The proposed action includes: 1) reserve one allotment for big game use; 2) continue present allotment-wide grazing on 17 allotments; 3) continue present improved management on four allotments with existing AMPs; and 4) implement improved management on 17 allotments. (These actions would involve combining 50 existing allotments into 39 allotments).

Developments proposed include: fencing 3.5 miles of stream banks, 26.5 miles of division and allotment boundary fences, 52 water developments, and 1,620 acres of sage brush control.

3. Summary of Environmental Impacts: In general, existing fair and good forage condition for livestock on 182,121 acres would be maintained or improved. Poor forage condition for livestock would remain on 8,145 acres. Vegetation composition changes would occur, with increases in desirable plants on 22 allotments. Existing forage (AUMs) for livestock and big game would be used and future increases in forage production and use (by 7,572 AUMs) would occur along with related economic gain. Wildlife habitat would decline in quality on 10 allotments. Minor impacts would occur to these resources: soils, water, threatened and endangered plants (inadvertant loss), cultural and paleontological features (inadvertant damage), and recreation values.

4. Alternatives Considered Are: 1) Livestock grazing at full forage production; 2) continuation of present range management and level of allocation (no action); 3) livestock grazing at 50% of the initial proposed stocking level; and 4) elimination of all livestock grazing.

5. Comments Have Been Requested From the Following: (See Attachment).

6. Date Draft Statement Made Available to EPA and the Public:
June 15, 1979.

ATTACHMENT

Comments on the Draft Environmental Statement were requested from the following agencies, interest groups, and individuals. A Public Hearing was held in Vernal, Utah on July 12, 1979. (*Denotes comments received.)

1. Federal Agencies

Department of Agriculture
    Agricultural Stabilization and Conservation Service
    Forest Service*
    Soil Conservation Service*
Department of the Interior
    Geological Survey*
    Fish and Wildlife Service*
    Bureau of Indian Affairs
    Bureau of Mines
    Bureau of Reclamation*
    Heritage Conservation and Recreation Service*
    National Park Service*
        Dinosaur National Monument
    Office of the Solicitor
Department of Commerce
Advisory Council on Historic Preservation*
Environmental Protection Agency*

2. State Agencies and Entities

State of Utah
    Clearing House (A-95)*
    Department of Agriculture
    Department of Natural Resources
    Division of Lands
    Division of Wildlife Resources*
University of Utah
Utah State University*
State of Colorado
    Governor's Clearing House*
    Division of Wildlife*
    State Historical Society
State of Wyoming
    Fish and Game

3. Local Agencies

Uintah County Commissioners (Utah)
Daggett County Commissioners (Utah)
Moffat County Commissioners (Colorado)
Sweetwater County Commissioners (Wyoming)

4. Non-government Organizations

Ada County Fish and Game League
Ashley Valley Woolgrowers

Audubon Society
Brigham Young University
Colorado Cattlemen's Association
Colorado Open Space Council
Colorado Plateau Environment Advisory Council
Colorado Wool Grower's Association
Common Cause
Council on Utah Resources
Defenders of the Outdoor Heritage
Defenders of Wildlife
Enchanted Wilderness Association
Environmental Action
Enviornmental Awareness
Environmental Defense Fund
Friends of the Earth
Good Earth
Izaak Walton League
League of Women Voters
National Council of Public Land Users
National Parks and Recreation Association
National Stock Grower's Association
National Wildlife Federation
Natural Resources Defense Council
Nature Conservancy
Nevada Outdoor Recreation Association
Oregon Environmental Council
Pacific Legal Foundation
Pro-Utah, Inc.
Public Lands Council
Rocky Mountain Center on Environment
Rocky Mountain Sportsmen Association
Save Our Canyons Committee
Sierra Club
Society of Range Management
The Wilderness Society
The Wildlife Society
Utah Cattlemen's Association*
Utah Chapter, Trout Unlimited
Utah Environment Center
Utah Farm Bureau
Utah Nature Study Society
Utah Sportsmen Association
Utah Archaeological Society
Utah Wildlife and Outdoor Recreation Federation
Utah Wool Grower's Association*
Vernal Chamber of Commerce
Vernal Rod and Gun Club
Women's Conservation Council of Utah

5. Congressional

Colorado Delegation
Utah Delegation

6. Interested Individuals

Copies of this final environmental statement were available for public inspection at the Bureau of Land Management Offices listed below:

Washington Office of Public Affairs
18th and C Street, N.W.
Washington, D.C. 20240
Phone: (202) 343-4151

Utah State Office
University Club Building
136 East South Temple
Salt Lake City, Utah 84111
Phone: (801) 524-4227

Vernal District Office
170 South 500 East
Vernal, Utah 84078
Phone: (801) 789-1362

TABLE OF CONTENTS

CHAPTER 9

Page

INTRODUCTION 9-1

A. HISTORY OF COORDINATION EFFORTS 9-1

B. COORDINATION IN THE DEVELOPMENT OF THE PROPOSAL 9-1

C. CONSULTATION AND COORDINATION IN PREPARATION OF THE DRAFT ENVIRONMENTAL STATEMENT 9-3

D. COORDINATION IN REVIEW OF THE DES 9-6

E. PUBLIC COMMENTS ON THE DRAFT ES 9-8

F. COMMENT LETTERS 9-29

ADDENDUM

TEXT CHANGES IN THE DRAFT Following p. 9-53

LIST OF FIGURES

CHAPTER 9

9-1 Three Corners Planning Unit, Vernal District

CHAPTER 9

CONSULTATION AND COORDINATION

CHAPTER 9
CONSULTATION AND COORDINATION

INTRODUCTION

The Draft Three Corners Grazing Management Environmental Statement was released to the public on June 15, 1979. A formal public hearing concerning the draft environmental statement was held in Vernal, Utah on July 12, 1979. The 45-day public review period ended on July 30, 1979.

The testimony transcripts from the public hearings and comments received in letters during the public review period identified parts of the draft environmental statement that needed correction, clarification or expansion. Most information in the draft is still accurate and complete, and a complete reprinting of the draft statement was not warranted. The final Three Corners Grazing Management Environmental Statement includes new information, corrections, and responses to specific comments. The final environmental statement must therefore be used in conjunction with the draft environmental statement for a complete display of information and analysis.

The final environmental statement is an expansion of Chapter 9 of the draft environmental statement. Within Chapter 9, Part E "Public Comments on the Draft," is arranged by comment followed by response. Part F, "Comment Letters" contains comments on the draft ES from the public and other government agencies consulted during the process. Part F is followed by an addendum, "Text Changes in the Draft," which contains pages on which changes have been made in the draft. The addendum is arranged by sequential page numbers. It includes all changes in text resulting from public comments or internal reevaluation. The text additions and changes are underlined, while an arrow (→) marks points in the text where deletions were made.

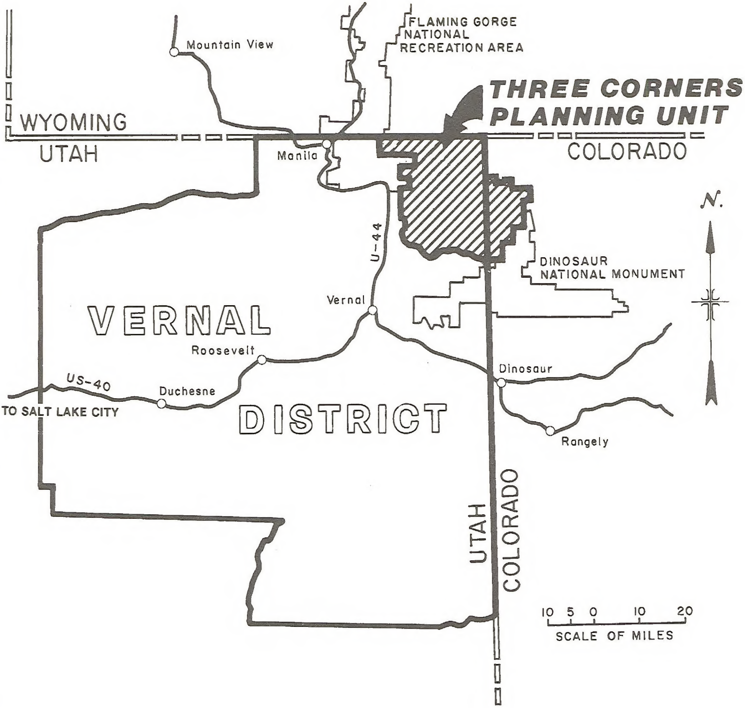
A. HISTORY OF COORDINATION EFFORTS

The Three Corners Planning Unit, see Figure 9-1, was originally broken into two distinct units--the Browns Park and Diamond Mountain units. The two units had individual management framework plans (MFP) prior to their consolidation in late 1977. Public meetings were held to incorporate public opinion in those MFPs. The Diamond Mountain public meeting was held in March of 1974, in Vernal, Utah and was attended by 47 people who represented themselves, livestock operations, private industry, sporting concerns, and federal, state, and local government. The Browns Park public meeting was held in August, 1977 in Manila, Utah and was attended by 19 people representing similar concerns.

Contacts were also made to receive public input into the Diamond Mountain MFP for those lands in Colorado administered by the Vernal District Office. Meetings to this end were held with the Moffat County Commissioners (March 4, 1974), the Colorado Game, Fish, and Recreation Department (March 5, 1974), and representatives from Dinosaur National Monument (March 5, 1974).

B. COORDINATION IN DEVELOPMENT OF THE PROPOSAL

Development of this proposal has made considerable use of public involvement in the BLM planning system. Interviews were conducted with the Uintah County Commission and other concerned individuals to provide input into the Vernal Planning Area Analysis. Landowners and livestock operators were also interviewed during preparation of the Unit Resource Analysis.



SOURCE: THREE CORNERS PLANNING DOCUMENTS

THREE CORNERS PLANNING UNIT
VERNAL DISTRICT

FIGURE 9-1

A public meeting was held in Vernal on April 13, 1978. The purpose of this meeting was to discuss land use plans in the Three Corners Planning Unit prior to formulation of the proposal. Those not able to attend were encouraged to send comments to the BLM District Manager in Vernal.

Attending the public meeting in Vernal were approximately 100 people representing themselves individually or those organizations and agencies listed below:

Diamond Mountain Landowners Association
Uintah County Commission
Uintah County Search and Rescue
Uintah County Farm Bureau
U.S. Forest Service (Ashley National Forest)
Utah Cattlemen's Association
Utah State Parks and Recreation
Uintah County Historian

Letters were received from:

Outdoors Unlimited, Inc. (Wyoming, Utah, Nevada Chapter)
United Sportsman's Council of Colorado

C. CONSULTATION AND COORDINATION IN PREPARATION OF THE DRAFT ENVIRONMENTAL STATEMENT

The Three Corners Environmental Statement team was organized in May, 1977, at the Bureau of Land Management District Office in Richfield, Utah. The interdisciplinary team consisted of specialists in wildlife, fisheries, range, recreation, botary, soils, geology, cultural resources, and socio-economics. The following sections summarize the consultation and coordination carried out by the team specialists in the course of analyzing the proposal.

1. Federal Contacts

The following are the contacts initiated and actions completed in preparation of the draft statement. Comments received from these agencies were considered in preparation of the statement.

Agency	Nature of Contact	Response	Action Taken
Soil Conservation Service	Requested data assistance and help in analysis.	yes	Data not available; help in analysis provided.
U.S. Fish and Wildlife Service	Requested data assistance.	yes	Confirmed data Letter A.
U.S. Agricultural Stabilization and Conservation Service	Requested data assistance.	yes	Provided data assistance.

Agency	Nature of Contact	Response	Action Taken
U.S. Forest Service	Requested data assistance	yes	Provided assistance; data inconclusive.
U.S. Army Corps of Engineers	Requested input into environmental studies.	yes	None. No Corps of Engineers projects in area; unable to contribute useful information.
National Park Service	Requested data assistance.	yes	Provided data assistance.
Advisory Council on Historic Preservation	Informed the Council of the proposed action and requested procedural assistance.	Yes	Provided assistance.

2. State Contacts

Agencies of state government having jurisdictional interests or special expertise in the project, listed below, have been contacted and have supplied statement data.

Agency	Nature of Contact	Response	Action Taken
Utah Division of Wildlife Resources	Requested data assistance.	Yes	Provided data assistance.
Utah State Environmental Coordinating Committee	Requested consultation.	Yes	Only agency choosing to respond was Division of State History.
Utah State Department of Agriculture.	Requested consultation	Yes	Provided consultation.
Utah Department of Transportation	Requested consultation.	Yes	Provided consultation.
Utah Division of State Lands	Requested data assistance.	Yes	Provided data assistance.
Utah Division of State History	Informed agency of the proposed action and requested data assistance.	Yes	Provided data assistance.

Agency	Nature of Contact	Response	Action Taken
Utah State Historic Preservation Officer	To comply with National Historic Preservation Act; preparation of memorandum of understanding.	Yes	A "Memorandum of Understanding" between the Bureau of Land Management and the State of Utah has been prepared and attached as Letter B.
Colorado State Historic Preservation Officer.	Requested comments on the Utah memorandum of understanding dealing with cultural resources.	Yes	Comments received (see Letter B).
Colorado State Land Board	Requested data assistance.	Yes	Provided data assistance.
Colorado Division of Wildlife	Informed agency of the proposed action and requested data assistance.	Yes	Provided data assistance.

3. Local Government

The following public officials at the local level were advised of the project. Their views and comments were considered in preparation of the statement.

Agency	Nature of Contact	Response	Action Taken
Uintah County Zoning and Building Administrator.	Informed agency of the proposed action and requested data assistance.	Yes	Provided data assistance.
Uintah County Assessor	Requested data assistance.	Yes	Provided data assistance.
Uintah County Recorder	Requested data assistance.	Yes	Provided data assistance.
Daggett County Clerk	Informed agency of the proposed action and requested data assistance.	Yes	Provided data assistance

Agency	Nature of Contact	Response	Action Taken
Moffat County Planning Commission	Informed agency of the proposed action and requested data assistance.	Yes	Provided data assistance.

D. COORDINATION IN REVIEW OF THE DES

The following list identifies those agencies, bureaus, and groups that received a copy of the draft environmental statement and were requested to submit written comments. (*Denotes comment received.)

1. Federal Agencies

- Department of Agriculture
  - Agricultural Stabilization and Conservation Service
  - Forest Service*
  - Soil Conservation Service*
- Department of the Interior
  - Geological Survey*
  - Fish and Wildlife Service*
  - Bureau of Indian Affairs
  - Bureau of Mines
  - Bureau of Reclamation*
  - Heritage Conservation and Recreation Service*
  - National Park Service*
  - Dinosaur National Monument
  - Office of the Solicitor
- Department of the Army*
- Department of Commerce
- Advisory Council on Historic Preservation*
- Environmental Protection Agency*

2. State Agencies and Entities

- State of Utah*
  - Clearing House (A-95)*
  - Department of Agriculture
  - Department of Natural Resources
  - Division of Wildlife Resources*
  - Division of Lands
- University of Utah
- Utah State University*
- State of Colorado*
  - Governor's Clearing House
  - Division of Wildlife*
  - State Historical Society
- State of Wyoming
  - Wyoming Fish and Game

3. Local Agencies

Uintah County Commissioners (Utah)
Daggett County Commissioners (Utah)
Moffat County Commissioners (Colorado)
Sweetwater County Commissioners (Wyoming)
Uintah Basin Association of Governments*

4. Nongovernment Organizations

Ada County Fish and Game League
Ashley Valley Woolgrowers
Audubon Society
Brigham Young University
Colorado Cattlemen's Association
Colorado Open Space Council
Colorado Plateau Environment Advisory Council
Colorado Wool Grower's Association
Common Cause
Council on Utah Resources
Defenders of the Outdoor Heritage
Defenders of Wildlife
Enchanted Wilderness Association
Environmental Action
Environmental Awareness
Environmental Defense Fund
Friends of the Earth
Good Earth
Institute of Ecology
Izaak Walton League
League of Women Voters
National Council of Public Land Users
National Parks and Recreation Association
National Stock Grower's Association
National Wildlife Federation
Natural Resources Defense Council
Nature Conservancy
Nevada Outdoor Recreation Association
Oregon Environmental Council
Pacific Legal Foundation
Pro-Utah, Inc.
Public Lands Council
Rocky Mountain Center on Environment
Rocky Mountain Sportsmen Association
Save Our Canyons Committee
Sierra Club
Society of Range Management
The Wilderness Society
The Wildlife Society
Utah Cattlemen's Association*
Utah Chapter, Trout Unlimited
Utah Environment Center
Utah Farm Bureau
Utah Nature Study Society
Utah Sportsmen Association

Utah Archaeological Society
Utah Wildlife and Outdoor Recreation Federation
Utah Wool Grower's Association*
Vernal Chamber of Commerce
Vernal Rod and Gun Club
Women's Conservation Council of Utah

5. Congressional

Colorado Delegation
Utah Delegation

6. Interested Individuals

Copies of the draft environmental statement were available for public inspection at the Bureau of Land Management Offices listed below:

Washington Office of Public Affairs
18th and C Street, N.W.
Washington, D.C. 20240
Phone (202) 343-4151

Utah State Office
University Club Building
136 East South Temple
Salt Lake City, Utah 84111
Phone (801) 524-4227

Vernal District Office
170 South 500 East
Vernal, Utah 84078
Phone (801) 789-1362

E. PUBLIC COMMENTS ON THE DRAFT ES

The Public Review Process and Procedures

The draft ES was filed with the Environmental Protection Agency on June 6, 1979 which provided for a comment period extending to July 30, 1979. A notice of availability of the draft ES and a public hearing announcement were published on June 15, 1979 in the Federal Register.

Over 400 copies of the draft ES were mailed to federal, state, and local governmental agencies, private groups, and organizations, and individuals for their review and comment. News releases included information on how to obtain copies of the draft ES and where reference copies were available.

All written comments and the hearing transcripts will be sent with the final ES to the Secretary of the Interior and the Environmental Protection Agency. They are also available for inspection at the State Director's Office, BLM, Salt Lake City; the BLM Vernal District Office; and the BLM Office of Public Affairs, Washington, D.C.

All comments were reviewed and considered. Those which presented new data, questioned findings of analyses, or raised questions or issues that relate directly to the adequacy of the draft ES were responded to and were used for text revision. Responses were not made to those comments that did not address the adequacy of the draft ES. The comments are numbered in a two number system. The first number represents the speaker or letter while the second number is the number of the comment made by that speaker or letter.

1. Public Hearings

The Bureau of Land Management conducted a formal public hearing on the draft ES on July 12, 1979 in Vernal, Utah. The Chief of Resources, BLM Utah State Office, Warren Brough presided over the hearings which were recorded verbatim by a court reporter. The full hearing transcripts are available for review in the Vernal District Office.

The following people attended the public hearings:

Panel

Ralph Heft	Diamond Mountain Area Manager
Alan Partridge	Team Leader, Three Corners Grazing Management ES
Greg Thayn	Technical Coordinator
Robert Jensen	Wildlife Biologist
Byron Tolman	Range Conservationist

The following people presented comments:

	Speaker	Representing
1.	Alex Radosevich	Self
2.	Carl A Gaensslen	Self
3.	Merril G Snow	Utah Cattlemen's Association
4.	Neil H. Domgaard	Uintah County Commission
5.	Wright Dickenson	Lazy VD Ranch

Response to Hearing Comments

4. Neil Domgaard, Vernal, Utah

4.1 Comment: I want you to verify page 67 [Chapter 8]. You listed only 3.4 percent of the total personal income came from Uinta Counties. Did you use current prices or did you use last year's prices where the price was so low that there wouldn't be much meaning to this report?

Response: The 3.4 percent figure represents 1976 and 1977 Bureau of Economic Analysis data which is the only available information. Current data can be computed by applying current economics factors. An explanation of the limitation and applicibility of economic data is given on Page 2-103 of the draft ES.

5. Wright Dickenson, Browns Park, Utah

5.1 Comment: I think that that natural resource should be improved. We definitely know that through controlled burning or sagebrush spraying, chemical spraying, we can greatly improve it.

Response: The "Full Forage Production" alternative analyzes the effects of more range improvments. The BLM recognizes benefits can be gained from vegetation manipulations such as chaining and seeding, spraying, etc. Such range improvements are often very successful, and contribute to improving livestock forage condition as well as improving vegetation condition as measured from other perspectives.

5.2 Comment: I get a feeling of many, many fenced little pastures. I realize that that may give your government more control, but just at the same time remember that for labor in running a livestock outfit it's never going to get any better that we can see. What you are asking us to do is to move this livestock here and there and somewhere else. All of a sudden who is going to maintain all of these fences? Who is going to pay for all this? I think you better take a long hard look before you continue to chop this thing up.

Response: The responsibility for construction and maintainance of range developments is shown on Pages 1-26 and 1-27. Generally, BLM and the livestock operator would share the costs. Increased operator costs are analyzed in the socioeconomics section of Chapter 3 (Page 3-33). The figures are based on the assumption that operators would pay maintainance cost of fences and that BLM would provide for construction and reconstruction of fences and water developments,

5.3 Comment: The elk aren't that much of a grass eater. Now, I'm not saying they won't eat it, but they are going to eat browse more than they are going to eat that grass. All you have to do is go there and look at it, whether you look in the spring or the winter or the fall. They are not utilizing it all. For you to block off a piece and say that that piece of country is for one class of livestock and then they don't use it, I think it's all wrong fellows. . . . maybe some of these other permittees need to use that. (Refers to the Rye Grass Allotment.)

Response: While the existing situation and proposed action are to allow no livestock grazing, the possibility of grazing the Rye Grass Allotment by livestock was examined under the "Full Forage Production Alternative." Therefore, that possibility exists as a management option, but the determination would be made on the basis of advantage to wildlife and other resources.

2. Written Comments

Letters have been received from the following:

Letter Index No.	Letter Received From
1.	U.S. Department of Health, Education, and Welfare
2.	The President's Advisory Council on Historic Preservation
3.	Uintah Basin Association of Governments
4.	U.S. Geologic Survey
5.	Utah Wool Growers
6.	Peter Hovingh
7.	Wild Horse Organized Assistance, Inc.
8.	U.S. National Park Service
9.	U.S. Soil Conservation Service

Letter Index No.	Letter Received From
10.	Utah State University, Cooperative Extension Service
11.	U.S. Bureau of Reclamation
12.	Corps of Engineers, U.S. Dept. of the Army
13.	Utah State Planning Coordinator Division of Wildlife Resources
14.	Colorado State Division of Planning Division of Wildlife Division of Water Resources
15.	U.S. Environmental Protection Agency
16.	U.S. Fish and Wildlife Service
17.	U.S. Forest Service

Response to Written Comments

Letter Number 2--Louis S. Wall, Advisory Council on Historic Preservation

2.1 Comment: Generally, the council considers environmental evaluations to be adequate when they contain evidence of compliance with Section 106 of the National Historic Preservation Act, as amended. The environmental documentation must demonstrate that either of the following conditions exists:

> 1. No properties included in or that may be eligible for inclusion in the National Register are located within the area of environmental impact, and the undertaking will not affect any such property. In making this determination, the Council requires:
>
> --evidence that the agency has consulted the latest edition of the National Register (Federal Register, February 6, 1979, and its monthly supplements);
>
> --evidence of an effort to ensure the identification of properties eligible for inclusion in the National Register, including evidence of contact with the State Historic Preservation Officer, whose comments should be included in the final environmental statement.
>
> 2. Properties included in or that may be eligible for inclusion in the National Register are located within the area of environmental impact, and the undertaking will or will not affect any such property. In cases where there will be an effect, the final environmental statement should contain evidence of compliance with Section 106 of the National Historic Preservation Act through the Council's regulations, "Protection of Historic and Cultural Properties."

Response: The measures pertaining to the National Historic Preservation Act of 1966, as amended, and the Council's regulations contained in 36 CFR Part 800 have been dealt with in a Memorandum of Understanding between the Bureau of Land Management and the State of Utah. This Memorandum of Understanding is attached as Letter C in Chapter 9 in the final ES along with a letter from the Utah State Historic Preservation Officer approving the measures contained in the Memorandum. A similar letter (Letter B) from the Colorado State Historic Preservation Officer is attached also.

Letter Number 3--Clinton C. Harrison, Uintah Basin Association of Governments

3.1 Comment: We do not feel the draft is in acceptable form at this time. The problem areas not solved were: 1. Changes in grazing allocations diverting AUMs to wildlife rather than to livestock are not supported by need;

Response: The proposed action and subsequent analysis is based on the flexibility to adjust to demonstrated demands. However, it is proposed to allow temporary livestock use of competitive forage allocated to wildlife until big game populations increase. The proposal allows for a temporary livestock increase of use above the present use or allocation and does not divert AUMs to wildlife. The forage can be made available to livestock by installation of range developments. It would then be used by livestock on a annual, nonrenewable basis until needed by big game. This and other temporary adjustment could result in year-to-year forage uses by livestock and big game that vary somewhat from the proposed allocation (see Page 1-18 in the Draft ES).

Letter Number 4--Henry W. Culter, U.S. Geological Survey

4.1 Comment: The description of the existing environment (ch. 2) should include the occurrence, quality, and use of ground water; this information is especially needed in view of the stress on wells and springs in the program. Locations of springs and wells should be shown on the water resources map (fig. 1-8) or on another suitable map. According to appendix II-3, ground water must contribute a major portion of the consumptive use; plans for spring development (e.g., table 1-8) suggest that indeed the use of ground water will be increased.

Response: A detailed map showing all water resources was not included. We believe this level of detail is not needed at this time. However, this information is available and is located in the Vernal District planning documents. It will be used when detailed management plans are written.

The proposal does not recommend an increase in the use of ground water. Currently there are only eight wells on public lands in the Three Corners area, and no new wells will be drilled under the proposed action. Appendix II-3 shows present consumptive use and, as noted on Page 3-4, the consumptive use is only 0.02 percent of the planning unit's water yield.

Any use of water from springs would be made after the water appears on the surface. If this water is not collected and put in troughs, for use by livestock and game, much of it would be lost through evaporation.

4.2 Comment: The potential for impacts on ground water quantity and quality from such use and from range maintenance procedures such as the use of herbicides should be addressed in the statement.

Response: The text on page 3-4 has been changed. See addendum section.

Letter Number 5--Sam Chournos, Utah Wool Growers

5.1 Comment: Though as you state the domestic livestock income is only a small part of Uintahs or Daggetts counties income, it's a basic income, it's using a renewable resource that could not be used in any other way and it is producing food and fiber for the economy of the state, nation, and world.

An observation, you do not give much consideration to individuals nor to the economy it has as on the small community.

Response: The BLM recognizes that grazing on the public lands is an important use of renewable resources and it is Bureau policy to encourage multiple use and sustained yield from all of the resources we manage. The economic impacts on size categories of individual operators is given for the proposed action on Page 3-40. The data is based upon the "average" operator in each a category to safeguard individual operator's privacy and to simplify the analysis. The effect on jobs in the local communities is stated to be too small to quantify. Similar impact analysis is given for each of the alternatives in Section F of Chapter 8 (Page 8-131).

Letter Number 8--Richard A. Strait, U.S. National Park Service

8.1 Comment: Page 1-2, 23, 26: Sagebrush control is proposed by spraying 2,4-D and by chaining. One result of this is a loss of aesthetic values and probably a need for reseeding. Personnel at Dinosaur National Monument have noticed that fires on nearby Bureau of Land Management (BLM) lands (e.g., Plug Hat) allowed natural reproduction of native grasses and appeared to improve range forage conditions. The recovery rate appears to be shorter than that for chemical control, making the range useable within a year or two. We believe controlled burns should be considered as an alternative means of sagebrush reduction.

Response: Initial analysis indicates that the environmental effects of fire are dependent upon the conditions of the burn and are presently too unpredictable to use fire as a reliable alternative method of sagebrush control. Fire must be carefully prescribed and used at proper times and conditions. There have been several "successful" wildfire burns where natural reproduction and native grasses have responded well. There also have been more destructive "hot" burns where native vegetation has been completely destroyed. Recovery in these cases is completely dependent upon seeding and non-use for 3 to 5 years.

8.2 Comment: Page 1-25: Item 5 should note the need to adhere to the requirments of Executive Order 11593.

Page 3-24: The "Conclusions" section for impacts on cultural resources should include surveys done in compliance with Executive Order 11593.

Response: The Memorandum of Understanding attached as Letter C, pages 9-8, -9, and -10, specifies compliance with 36 CFR 800. These regulations outline compliance with Executive Order 11593 in sections 800.1(b) and 800.4. The Memorandum of Understanding is referred to in both item 5 on page 1-25 and in the "Conclusions" section on page 3-24. No surveys have been done, but would be prior to surface disturbance as specified in the Memorandum of Understanding.

8.3 Comment: Page 1-34: We believe a reexamination is needed of some of the assumptions under the National Park Service section. Dinosaur National Monument encourages its neighbors to fence livestock out of the monument. We believe the assumption that the Service would construct and maintain a fence is open to negotiation. Moreover, the Service has always and will continue to manage grazing activities within the monument. The statement that "BLM will continue to administer the grazing for both agencies" is erroneous.

Additionally, we believe the statement, as written, places the National Park Service in a poor light as contributing to a loss of grazing in the area. We recommend the entire section be rewritten as follows and let the reader draw his or her own conclusions:

> "The Wild Mountain grazing allotment includes both public land administered by BLM and Dinosaur National Monument. The National Park Service has issued grazing permits for three operators within the allotment. Two of these permits expire in 1985 and will not be renewed."

Response: The text on Page 1-34 has been changed. See addendum section.

8.4 Comment: Page 2-1: The section on "Air Quality" should note that there is an air quality measuring station for particulates at Dinosaur National Monument headquarters.

Response: The measuring station at the National Monument has been in operation since the summer of 1979, and no data have been supplied.

8.5 Comment: Page 3-1: Air quality impacts are written off as insignificant. Yet the chaining operations will create abnormal levels of dust. Additionally, no mention is made of how the cleared sagebrush would be disposed of. If burned, this would also contribute to lessened air quality.

Response: Page 3-1--The chaining activities proposed for 400 acres would be of short duration (3 days maximum) and dust would be so diffuse that it would not have a measurable effect upon the potential Class I air shed of Dinosaur National Monument. Even though the level of particulates would be high in the immediate vicinity of the chaining, the effects do not meet the significance criteria explained in the introduction to Chapter 3. Standard design measure 3 on Page 1-25 has been altered.

8.6 Comment: Page 2-57: There is no mention in the "Animal Life" section about black bear or cougar as wildlife; yet hunting of these species is mentioned under "Recreation Resources" on page 2-88, and cougar is mentioned again on page 2-112.

Response: The references to cougar and black bear on Page 2-88 and 2-112 have been deleted since no significant impacts to these species from the proposed action or alternatives were identified.

8.7 Comment: Page 2-68: There is no mention of the bighorn sheep population (though small in number) that inhabits portions of the Wild Mountain area in the Vicinity of Pot Creek and nearby areas. The Dinosaur National Monument staff have observed bighorn from Little Hole on the north along the Green River down to the Wild Mountain and Bowery Spring allotments.

Response: The ES was written using data which was available at the time. The UDWR or our Vernal office staff have no verified sightings of bighorn sheep on public lands in the planning unit. We do not believe that bighorn sheep occur on public land in the planning unit; as mentioned, recent sightings were on Dinosuar National Monument. If bighorn eventually are shown to exist on public land they would be managed for under the multiple use concept.

8.8 Comment: Page 2-79: The discussion of peregrine falcons should be expanded to recognize that an active aerie has been identified in Dinosaur National Monument at Steamboat Rock just below the Wild Mountain Allotment. The peregrine could be expected to use the air space above the allotment.

Page 3-21: The "Threatened or Endangered Species" section should discuss peregrine falcons as mentioned above.

Response: The text on pages 2-79 and 3-21 has been changed. See addendum section.

8.9 Comment: Page 2-112: We believe a biased position can be read into the discussion on "Water Resources." Water quality was purest when only wildlife used the land. Adding recreation visitor use leads one to believe only livestock grazing can maintain the water quality.

Response: This statement referred to on Page 2-112 refers to expected changes in water quality from future increases in recreation and wildlife use whether or not the proposal is implemented.

8.10 Comment: The "Cultural Resources" and "Paleontological" sections mention impacts of increased visitation and weathering, but we note that nowhere in the document is there a discussion of how these effects would be mitigated.

Response: The impacts of increased visitation and weathering are brought up under the "Future Environment Without the Proposed Action" section of Chapter 2. The impacts and mitigation of impacts presented in the environmental statement deal only with the impacts created by the proposed action and alternatives.

8.11 Comment: Under "Social-Cultural Values," we question whether "the social environs would continue to place a high value on agriculture and livestock grazing." The last sentence of the paragraph seems to contradict this, perhaps indicating that agriculture and grazing no longer have a high value.

Response: The last sentence on Page 2-114 merely indicates that in general the people place a high value on the surrounding wild areas for hunting. But, they also place high value on agriculture and livestock grazing as indicated in previous sentences. We see no contradiction with people placing a high value on both livestock grazing and good hunting. The two values coexist in the general area.

8.12 Comment: Page 3-20: The "Animal Life Analysis Section" has no discussion of bear, cougar, bighorn, or chukar as mention above.

The discussion of upland game should recognize that chukar partridge have been introduced into Dinosaur National Monument and have been observed on the fringes of the planning area.

Response: Bighorn sheep are not believed to occur on public land within the planning unit. The initial analysis indicates that all of the other animals would not be significantly affected by the proposal because of their limited occurence in the planning unit.

8.13 Comment: Page 5-2: Again, we believe bias has crept into the "Socioeconomics" section. In the long term, we believe eductional efforts can break down barriers of mistrust between the public and the land manager. This section as written, could be used as an excuse by the land manager to not carry out the best range management practices, feeling that it wouldn't be acceptable with the local populace anyway.

Response: These statements merely reflect the adverse opinions as determined through personal interviews. While educational efforts certainly can break down barriers, it cannot now be stated with any certainly that such barriers would be reduced when a grazing management program is implemented. The legal contraints imposed by the Federal Land Policy and Management Act preclude the land manager from using such an "excuse."

8.14 Comment: Page 6-2: The "Cultural and Paleontological Resources" section, as written, could lead the reader to believe there is nothing one can do about the loss of these resources. We suggest the statement be reworded to address results that might occur from mitigation measures, such as surveys, and avoidance mentioned in the letter from the Colorado State Historic Preservation Officer.

Response: The impacts on cultural and paleontological resources discussed on Page 6-2 are unavoidable and could occur even with application of the mitigating measures mentioned above and measures 5 and 11 presented on pages 1-26 and 1-27.

Letter Number 11--D. W. Wehber, U.S. Bureau of Reclamation

11.1 Comment: The impact of complete elimination of grazing, as an alternative to the proposed action, has not been fully explored. It goes beyond the loss of income to ranch operations. It would have an impact on the total economy of the area including the Vernal and Jensen areas which both have agricultural economies supported by existing Reclamation projects.

Response: As stated on Page 8-121, the elimination of livestock grazing on the Three Corners Planning Unit would result in only a 4 percent reduction of the total livestock income and 0.3 percent reduction of the total personal income in Uintah and Daggett counties. The influence which this alternative would have on the community and state levels is considered insignificant. To clarify the connection of insignificant effects on the community (Jensen, Vernal) level, the word "regional" on Page 8-121 has been replaced by "local community" level.

Letter Number 12--George C. Weddell, Corps of Engineers

12.1 Comment: There are no Corps of Engineers projects or anticipated water resource developments in the area that would be affected by the proposed action. We do have a responsibility to regulate the discharge of dredged or fill material into waters of the United States or wetland areas pursuant to Section 404 of the Clean Water Act (33 USC 1344). Water developments in the planning unit are included under the management plan, but the information provided is insufficient to determine whether a Department of the Army permit would be required.

Response: The planned water developments include improving small springs, piping water to troughs, and constructing small reservoirs that would normally hold less than 1 acre-foot of water.

These types of improvements do not appear to fall within the general guidelines of projects that would be regulated by the Corps of Engineers persuant to Section 404 of the Clean Water Act.

Letter Number 13--Douglas F. Day, Utah Division of Wildlife Resources

13.1 Comment: Our principal concern centers on the management direction on seven allotments. The seven in question are Clay Basin, Antelope Flat, Goslin Mountain, Little Hole, Sears Canyon, Jackson Draw, and Willow Creek. All or a portion of each of these allotments are winter range for deer, elk, and antelope; and as such, the winter range portions of each should be managed to maintain or improve browse forage. The indicated long-term result of implementing the proposed BLM grazing action is conversion of forage on these allotments from browse to grass. As winter range remains the limiting factor on big game populations in this area, it would be unacceptable to decrease forage quality for big game on any winter range allotments. Spring livestock grazing must be used when necessary to maintain favorable game range conditions. We trust that this management tool will be used and that the final environmental impact statement will indicate this management direction.

Response: The level of analysis in the environmental statement does not describe the allotment management level that would occur. With the objectives of the MFP, we also assume that spring use would be incorporated in the allotment management plan (AMP) when they are applied. When the final land use plan is prepared by the District Manager, he could specify that AMPs on these allotments would provide for more spring grazing by livestock and other treatments which would enhance browse conditions.

13.2 Comment: Sagebrush sprays on selected allotments are mentioned in several places in the ES. Ruple Cabin, Davis Draw, and Crouse Reservoir allotments have sage grouse use areas and any vegetational control on these areas should closely follow the sage grouse habitat guidelines, unless alternatives are mutually agreed upon with the state wildlife agency.

Page 1-28, all sage grouse habitat guidelines should be followed. These involve more than just distance to strutting grounds from sprays.

Page 5-1, Animal Life, third paragraph, negative impacts on sage grouse should be minimal if sage grouse habitat management guidelines are followed.

Response: It is BLM policy to involve the UDWR prior to development of projects which will affect important wildlife species. An environmental assessment is also made prior to such projects. Any spraying projects would definitely consider all aspects of the sage grouse guidelines, up-to-date sage grouse information, and input from UDWR before they are implemented.

Standard feature 12 on Page 1-27 has been added to require coordination between BLM and the UDWR. This further requires compliance with BLM-UDWR coordination as outlined in a Memorandum of Understanding, dated June, 1979, between the agencies.

Project design restrictions have been changed as shown on page 1-28. See addendum section.

13.3 Comment: Also, the first sentence is contradictory to statements in the second and third paragraphs on page 1-24, which describe management of grazing to enhance big game habitat and forage in the Red Creek, Taylor Flat, Watson, and Bridgeport allotments.

Response: The statement on Page 5-1 applies to those allotments where improved management would be implemented. Red Creek, Taylor Flat-Watson and Bridgepart allotments are not part of this group (see Appendix I-3).

13.4 Comment: Our most recent aerial count on the Daggett antelope herd unit in April 1979 showed 443 animals (excluding the Bridgeport Allotment which has an estimated 25 antelope). We feel that we count about 85 percent of the total antelope on our aerial counts. Thus, we estimate a total 546 antelope in the Daggett herd; including the 25 in Bridgeport. Approximately 63 percent (or 345 antelope) range on BLM land. A forage allocation of 431 AUMs would be necessary just to support the existing population.

Removal of sheep permits from the antelope range on Antelope Flat, Clay Basin, and Goslin Mountain several years ago has resulted in what we feel are improved range conditions. Antelope numbers have increased over the past 2 years. We feel, under present cattle grazing management, that this area would support about 800 antelope with an additional 75 head at Bridgeport. Approximately 550 animals could be supported on BLM range, with the remaining 325 on Forest Service, state, and private lands. A forage allocation of 687 AUMs on BLM land would support this population level. This is about 307 AUMs more than is provided for in the BLM proposed action. The sharp increase in antelope numbers the past two years would indicate that perhaps space is not as critical a limiting factor as range conditions, which have improved, and sheep-antelope competition, which has been eliminated. BLM studies indicate very minimal competition between antelope and cattle on these allotments.

Page 2-68, Pronghorn Antelope, our current estimate of antelope numbers in the Antelope Flat-Clay Basin-Goslin Mountain-Willow Creek area is 328 on BLM land. While the herd is definitely limited by space, current indications are that the ES figures are much too restrictive and even below present population levels.

Response: The calculations for derived antelope numbers were based on 1976 Big Game Handbook figures. We have reviewed the latest antelope population estimates by UDWR. The 14 percent difference between the estimates used in the draft ES and the latest angelope counts is within the possible error factor of the population estimation methods. This difference would not have an effect on the analysis presented in the draft ES. As noted in the UDWR comment and the draft ES, the range conditions are improving. BLM will use the most recent figures to implement the grazing plan. Allocations would be made to fit available forage while maintaining watershed and range objectives.

13.5 Comment: Mention is made in the ES that the Rye Grass Allotment, which is reserved for big game, will eventually go to grass with the loss of favorable browse conditions. This allotment will be maintained with a forage composition favorable to big game. This may require periodic spring livestock grazing on selected areas.

Response: The Rye Grass Allotment is reserved for big game use. Management of the allotment would be to maintain desired big game habitat (see Alternative B, "Full Forage Production"). The allotment would be worked into a habitat management plan at some future date. This activity plan would be accomplished in cooperation with UDWR. In the interim, if our planned monitoring program indicates a need for spring grazing, it can be accomplished.

13.6 Comment: Both black bear and cougar should be included in the Animal Life section as game animals that are present on the planning unit. Blue and ruffed grouse should be included in the upland game section on page 2-79.

Page 2-79, Upland Game, it should be noted that blue grouse also inhabit portions of the planning unit.

Page 2-86, third and ninth paragraphs, it should be noted that the 1979 Utah Legislature gave protected status to the bobcat, reptiles, and amphibians.

Page 2-86, fifth paragraph, river otter should be included in this list of managed aquatic furbearers. The status of the otter is unknown, but they are protected under the furbearer proclamation.

Page 2-86, the Invertebrates section relates too generally and vaguely to aquatic invertebrates. No data on community types, species associations, or species occurrence are presented, although such data are commonly used as indicators in water quality assessments. Apparently, no effort was made to collect invertebrate data for this ES. Something more than three vague sentences are necessary to assess riparian-aquatic impacts.

Response: The above species were considered in preliminary analysis and it was determined that the impact of the proposal or the alternatives upon these animals would be insignificant and they were not considered in the final analysis. The river otter was left out because it was believed not to exist in the planning unit.

13.7 Comment: Summary, item 3, should state the expected decrease in quality of winter range on a substantial number of allotments.

Response: The text on the summary page has been changed. See addendum section.

13.8 Comment: Page 1-1, second paragraph, the first sentence lists 326,083 acres in the planning unit but Table 1-1, page 1-3, lists 282,796 acres.

Response: Table 1-1 lists only acreage inside allotment boundarys. The remaining 43,287 acres of private land are not within allotments and are not analyzed in the statement (see Appendix I-1).

13.9 Comment: Page 1-5, Figure 1-2, the landownership map including the back folder should be changed to show UDWR ownership of the lands adjacent to the Green River at Bridgeport and BLM ownership of the Campbell Ranch. Also, UDWR owns 160 acres immediately south of Matt Warner Reservoir in the W 1/2 SW 1/4 Sec. 1 and E 1/2 SE 1/4 Sec. 2, T. 1 S., R. 2, 3, E.

Response: The land ownership map is incorrect. It has been noted that UDWR does own the lands adjacent to the Green River at Bridgeport. BLM does not now own the Campbell Ranch. It was purchased by Nature Conservancy and is currently being managed by BLM until its purchase from them can be finalized.

UDWR purchased the 160 acres of land south of Matt Warner Reservoir on July 27, 1979. This does not have any effect on the impacts identified in the DES.

13.10 Comment: Page 1-13, item 8, the figure 3,458 appears to be incorrect, as it does not total with 4,838 to give 6,091 AUMs.

Response: The text on Page 1-13 has been changed. See addendum section.

13.11 Comment: Page 13, Item 9, the figure of 355 initial AUMs does not agree with the summary page (378 AUMs), nor does the long-term 380 AUMs agree with that given on Page 3-23 (405 AUMs).

Response: The figure of 355 AUMs for antelope is a planning unit objective based upon current use. The summary is correct and the initial allocation would exceed the objective. The 405 AUMs figure is in error and has been changed. The text on Page 3-23 has been changed. See addendum section.

13.12 Comment: Page 13, item 10, the figure of 2,226 should read 2,229; and 10,296 should be 10,299 to be consistent with data on the summary page and pages 1-17 and 3-23.

Response: The text on Page 1-13 has been changed. See addendum section.

13.13 Comment: Figure 2-13, Important Sage Grouse Areas, is incomplete. Updating of the map showing additonal sage grouse strutting grounds and wintering areas should be done using information available at the Utah Division of Wildlife Resources Northeastern Regional Office in Vernal, Utah.

Response: The updated map was reviewed by the Vernal District Wildlife Biologist. The winter area for grouse extends into Bowery Spring and Davis Draw allotments. The new data does not change the impact analysis of the draft ES. As data becomes available, it will be incorporated into the planning documents and activity plans. The UDWR will continue to be consulted in the development of these plans. (Also see response to Letter 13, Comment 2.)

13.14 Comment: Page 2-112, Animal Life, all of the impacts described here will likely occur with or without the project. The future without the proposed action should address the results of browse winter range areas remaining as browse winter areas. This and other changes are related to the action addressed by the ES.

Response: This section describes the future environment without the proposed action and considering changes which will occur but are beyond the scope of the proposal. In order to determine the future of deer winter ranges, vegetation, etc., on public land, as a result of not implementing the proposal, see the "No Action" alternative starting on page 8-37.

13.15 Comment: Page 3-19, Relationship to Proposed Action, last paragraph, the statement that the objective would be met in improving or maintaining habitat for deer directly contradicts the first paragraph on the right-hand column on this same page. The same is true of statements on page 3-20 concerning antelope objectives. Objectives of improving habitat for deer and antelope will require maintaining an optimum vegetative composition on winter ranges.

Response: Detailed analyses does show that there would be habitat deterioration in some areas, but the overall deer habitat would be improved. The monitoring program, planning system and UDWR-BLM coordination can identify where a problem may become serious and take steps to alleviate the problem. The statement regarding antelope objectives is deleted. The text on Page 3-20 has been changed. See addendum section.

13.16 Comment: Page 5-1, Animal Life, first paragraph, the Rye Grass Allotment should be deleted from this list and Jackson Draw and Sears Canyon should be included.

Response: The Jackson Draw and Sears Canyon allotments have been included in the first paragraph, and the Rye Grass Allotment deleted. The text on Page 5-1 has been changed. See addendum section.

13.17 Comment: Page 6-1, Vegetation and Forage, first paragraph, the statements that big sagebrush will decrease on "all" areas of the planning unit is inconsistent with other statements in the document. This would be true of only the allotments without spring livestock grazing. The entire paragraph contradicts the projections made on pages 3-7 and 3-8 under Composition and Vegetation Ground Cover. This same contradictory statement is made at the bottom of page 6-1, under Animal Life, in sentence one. Sentence three in this paragraph states that general improvement in wildlife habitats would occur "with certain exceptions." Those exceptions are deer and antelope which are two of the three big game species being assessed. The sentence should be changed to read that big game habitats will generally decrease in value with the exception of elk.

Response: The first sentence under "Vegetation and Forage", Page 6-1, has been changed. The first and third sentences under "Animal Life" on Page 6-1 have been deleted.

13.18 Comment: Page 6-2, second paragraph, the statement that a long-term decline in deer numbers would be expected, contradicts several other statements, including that on page 3-41, first column, paragraph two.

Response: See Page 6-1, 1st paragraph which explains that the "long-term" referred to in this chapter is beyond 20 years and is brought about by factors outside the scope of this ES. The definition of long term used in Chapters 3 and 8 has been corrected to add clarification. For the purpose of analysis, both the recreaton and socioeconomics sections (Page 3-41) assumed that deer populations would reach the numbers provided for by the proposed forage allocation. The text on Page 3-1 has been changed. See addendum section.

13.19 Comment: Page 7-1, Animal Life, sage grouse range should not be negatively affected. This statement appears to indicate that measures to protect sage grouse habitat discussed in other sections of the ES will not be followed. What direction will be followed?

Response: The text on Page 1-27 has been changed. See addendum section and comment 2 of this letter.

13.20 Comment: Aquatic Wildlife The ES attempts to describe aquatic wildlife values, especially fishery values, on essentially uninventoried, unclassified streams. Table 2-18 (page 2-84) seems to assess the present fishery status of the waters as well as expected, considering the data shortage. Similarly, Table 2-19 (page 2-85) describes physical habitat conditions in a consistent, if not vague, manner.

The Green River fishery is described as a community of cutthroat, rainbow, and brown trout, and flannelmouth suckers. Populations of trout are generally described as stable or increasing. However, the tributaries are generally described as "unknowns" in reference to fishery populations. Fish habitat is described as "poor" in 11.1 streambank miles (or presumably 5.55 stream miles) in the Bridgeport, Watson, and Road Crossing allotments. It is assumed, then, that fishery conditions also are "poor," not stable or increasing.

Response: While 11.1 streambank miles have a "poor" fisheries condition habitat rating, the fish population "trends" are nonetheless stable or increasing. Population trend (Table 2-18) should not be confused with habitat condition (Table 2-19).

13.21 Comment: Table 1-3 (Rationale for MFP-2 Recommendations), it is stated that "Exclusion of livestock from all streams and riparian areas is of questionable practicability." Don Duff (BLM fish biologist) and Dr. William Platts (USFS grazing researcher) both feel total stream fencing is justified and practical as a means of protecting aquatic/riparian habitats. Total fencing seems to be the only way to protect aquatic/riparian habitats; rest-rotation programs seem to be ineffective protection. No grazing would substantially improve both riparian and aquatic habitats.

Response: In the judgement of those preparing the MFP, riparian areas that were in good condition should not be fenced to exclude livestock.
The impacts of this proposal are analyzed in the Animal Life section of Chapter 3 (Page 3-21). The final land management plan would be made after consideration of the stated impacts.

13.22 Comment: Page 3-21, the right-hand column of Fish, a population estimate is presented for Jackson Creek. such data should be presented as available in the section "Description of the Environment."

Response: Page 2-83 states ". . . limit the trout population to approximately 100 fish per stream miles. . . ."

13.23 Comment: Page 3-27, Fishing, it is stated that the proposal would not increase fisherman success, satisfaction or days. However, this is in direct disagreement with statement on page 2-112 (Land Use, Recreation Resources) that say, "Hunting, fishing, and floatboating are expected to continue as the major recreational uses. Increased use pressures would result in less hunter and fisherman success, and a reduction in quality of the recreational experience." We believe that fisherman use will increase and that success will probably decrease. This comment should hold under the proposed action and all alternatives, including "no grazing."

Response: The statement identified on Page 2-112 describes the anticipated "Future Environment Without the Proposed Action." The increased visitor use described here is a function of population and free-time factors not related to the proposal or alternatives. Increased fishing success, satisfaction, or days are not expected as a result of the proposed action.

13.24 Comment: Mitigating measures should include fencing of all public stream mileage throughout the management area. Fencing could be excluded on reaches that livestock are physically unable to get to, due to steep terrain. Fencing of present nonuse reaches should be done since livestock may shift to them as other areas are fenced. According to the document, about 51 percent of the present bank mileage is not grazed (or about 53.4 bank miles). This leaves 81.4 miles of bank accessible by livestock. Under the proposed action, only 3.5 bank miles (or 4 percent) will be fenced for stream protection. All streams tributary to the Green river in this area may have at least spawning importance as well as adult habitat, so fencing and consequent erosion control are imperative to protect Green River recruitment.

Response: All riparian habitat rated as fair or poorer is proposed for fencing. Riparian habitat in good or better condition would not require fencing. Components of the proposed action would be monitored as indicated on Page 1-25 and Table 1-4 on Page 1-13. If any riparian zones deteriorate from their present condition, steps, including fencing, would be taken to alleviate the problem. The effect or removing grazing from riparian areas was analyzed in the "Elimination of Grazing" alternative and therefore this alternative may be considered as a management option.

Letter Number 14--Bert Baker, Colorado Division of Wildlife

14.1 Comment: Page 1-13, Table 1-4, Objective 2. DOW experience in doing joint BLM-Division big game range studies, both intensively and extensively, indicates that DES vegetation ground cover values, particularly the Objective 2 25 percent ground cover goal, tend to be too high. Twenty-five percent might have some validity for a selected few grass or sagebrush types, although that figure is very unreasonable for pinyon-juniper overall.

Also pertinent to the above-mentioned subject are the DOW-maintained exclosures in Browns Park (2) and on Cold Springs Mountain (1) that were inventoried originally by line interception methodology. It is granted that data from those plots have not been updated lately, but the base-year information is still applicable as reliable indexes of many vegetation type plant coverages found south of the Green River in similar situations. Never did any of nine 3-way exclosure plots yield as much as 3 percent coverage of perennial vegetation, even at the exclosure on top of Cold Springs Mountain.

Response: Fourteen of the 39 allotments presently have 25 percent vegetation cover or better and two of the 39 allotments have a low of 8 and 9 percent vegetation ground cover. All of the allotments show upward and improving condition and trend as measured by BLM studies and observations. BLM specialists feel 25 percent is very real and attainable for the important grazing and watershed lands during the time period planned. The exceptions might be the two allotments that presently have 8 and 9 percent cover.

14.2 Comment: Page 1-28, Table 1-8, Item 3, under Sagebrush Control by Chaining and Item 5 under Sagebrush Control By Spraying. These paragraphs state that 1/2 mile radii buffer zones are afforded sage grouse leks, as credited to the Western States Sage Grouse Committee. The Committee actually recommended 3 km radii at leks, the 3 km equalling 1.8 miles which is a figure that the DOW has been observing.

Response: See comments 13.2 and 13.13.

14.3 Comment: P. 1-35, Paragraph 5, Wyoming Game and Fish Department and Colorado Division of Wildlife: In view of the light deer hunter pressures of 96 hunters for 1977 and 251 hunters for 1978 in Colorado Game Management Unit #1 (Green River), we doubt that "increases in big game numbers . . . .

would ultimately be controlled by . . . . .Colorado." Moreover, resulting deer harvests of 96 and 193 bucks, respectively those same years, should be interpreted to mean Colorado hunting is growing, yet still a neglibigle factor in control of this interstate population. Inaccessibility to this isolated area by the Colorado hunting public very probably will always be a deterrent to good management of all wildlife.

Response: Page 1-35 states that big game numbers would be controlled not only by Colorado but by Utah, Wyoming, and Colorado through a tri-state committee. Traditionally, state game agencies and big game boards have been responsible for control of big game numbers and it is assumed that this would continue to be the case.

Letter Number 14--Dr. Jeris A Danielson, Division of Water Resources

14.4 Comment: The report is too brief and does not provide sufficient detail for us to determine the impact that the grazing management plan would have on vested water rights. In order to evaluate the effects of the new water pipelines, storage tanks, and development of springs, we need to know the location of the spring improvements, the source of the water for the pipelines, and the quantity of water involved. Since Pot Creek is presently over-appropriated, we need the information before we can make any comments regarding the impact of the proposals. In addition, the waters of Pot Creek are administered between Utah and Colorado in accordance with a written memorandum of understanding.

Response: As allotment management plans are developed, detailed water needs will be identified. Then applications to appropriate water or change a point of use will be filed as required by administering state agencies in both Colorado and Utah.

Letter Number 15--Alan Merson, U.S. Environmental Protection Agency

15.1 Comment: Page 13 of the DES states, "The purpose of the proposal is to manage livestock grazing use on public land in a manner that would maintain or improve the range conditions and other related resources. . ." However, page 3-17 states, "Poor condition range would remain at 8,415 acres." It seems that emphasis should be placed on improving all ranges in the poor category. Only range in good condition should be considered as being maintained rather than improved.

Response: Not all rangeland can be improved through grazing management or range developments. Examples of limitations that complicate or prohibit improvement of range condition are local climate, soil characteristics, and topography. Refer to Page 2-57.

Letter Number 16--Robert H. Shields, U.S. Fish and Wildlife Service

16.1 Comment: Sagebrush spraying and/or chaining is proposed for Ruple Cabin, Hoy Mountain, and Davis Draw pasture (Table 1-3). According to Figure 2-13, Ruple Cabin is shown to have considerable winter sage grouse range in it, Hoy Mountain lies immediately adjacent to winter range and Davis Draw is some distance from sage grouse winter range. Before any treatment is begun in these areas, adequate on-the-ground surveys should be made for evidence of winter sage grouse use.

Response: See Comment 13.2 and 13.13.

16.2 Comment: Your map, Important Sage Grouse Areas (Figure 2-13), is quite likely lacking completeness. Strutting grounds and late winter use areas are inseparable. Strutting grounds isolated from winter range, like shown on the Willow Creek and Sears Canyon allotments, are highly unlikely and conversely, winter areas without strutting grounds are equally unlikely. Diligent searching and a little luck will give you the extent of the winter, breeding, and nesting habitat.

Response: See Comment 13.13.

16.3 Comment: The Fish and Wildlife Service recommends the Bureau of Land Management thoroughly study all proposed sagebrush control areas for sage grouse use and follow the guidelines for sage grouse habitat management outlined by Braun, Britt, and Wallestad (1977) and/or Call (1979) on all occupied sage grouse habitat. This would mean no sagebrush control within 3 km (1.83 miles) of sage grouse strutting grounds, rather than the 1/2 mile stated in Table 1-8 on page 1-28 in the draft environmental statement.

Response: See Comment 13.2.

16.4 Comment: Riparian-Aquatic Habitats: Riparian and aquatic habitats are so closely related that any management plan that affect one should similarly affect the other. These habitats are important to all sorts of terrestrial and aquatic life, water quality, and watersheds. The draft statement did not make it possible to compare conditions of riparian habitat (Table 2-7) with aquatic habitats (Table 2-19) or discuss their importance with each other. We suggest a change in the statement be made so they can be compared.

Response: Only fisheries habitat was shown in Table 2-19. However, Table 2-7 shows all water sources which produce a riparian zone. All aquatic habitats *per se* were not shown, because information concerning them is lacking.

Letter Number 17--Richard K. Griswold, U.S. Forest Service Regional Office

17.1 Comment: Page 1-13: To improve or maintain big game habitat and watershed conditions on 190,536 acres by maintaining at least 25 percent vegetation cover is a low requirement and will not provide watershed protection. Much of Diamond Mountain will have over 50 to 70 percent vegetation cover.

Response: Many of the allotments presently have more than 25 percent vegetation cover, the objective is probably low for watershed protection. Soil types and topography in the northeastern Utah allotments presently produce less than 0.5 acre-feet sediment yield per square mile per year. Because total ground cover (including rock and litter) is 50 to 60 percent, 25 percent vegetation ground cover is considered adequate for watershed conditions.

17.2 Comment: Page 1-13, Item 8: Total AUMs do not add up to present and increased elk populations.

Response: The text on Page 1-13 has been changed. See addendum section.

17.3 Comment: Page 1-14: Is the 15,901 AUMs the proper use capacity? The allocation increase in five years from 28,721 to 34,333 appears large, about 5,600 AUMs, as compared to the improvement program, 1,620 sagebrush control, 52 water developments, and improved management. The figures show this increase. Many of the rest-rotation systems have prevented adjustment, but large increases are not evident. We noticed four allotments for rest or deferred, 17 improved management, and 17 to continue allotment-wide management. Some of the existing improvements, such as the 4,000 acres of P-J chaining, will provide for additional capacity, but assumed these increases are included in the capacities since the project was rehabilitated in 1964.

Response: 15,901 AUMs are the present authorized use, not proper use. The allocation increase noted is about 20 percent. The forage production for most of the increase is on the ground now as unused forage. The only production increase is 1,860 AUMs over the current situation which is the capacity from forage surveys showing 34,343 AUMs, see Table 1-6; Page 1-17.

17.4 Comment: On page 7-1, it also mentions that irreversible loss of habitat from the vegetation conversion from browse to grass would occur.

Response: The range surveys indicate that the wildlife forage now exists. The proposal is merely a reallocation of the forage that is available. Page 7-1 has been reworded to clarify that the expected habitat loss would be beyond 20 years. This change does not materially affect the analysis.

17.5 Comment: Are wildlife improvements addressed in a separate plan, or have they already been accomplished? Are populations of elk and deer assumed to be below winter range carrying capacity?

Response: Any wildlife improvements would be addressed in a habitat management plan. Deer and elk are considered to be below the winter range carrying capacity. See Page 2-59, paragraph 4.

17.6 Comment: If the increased allocation of AUMs does result in increased big game population, what will be the impact on lands adjacent to the planning area; e.g., National Forest?

Response: Based on forage inventory data, the availability of winter range is the limiting factor that would determine the number of animals public lands can support. However, we realize that animal movement patterns cannot be controlled. Nevertheless, we assume that some additional summer wildlife use would occur on National Forest lands if wildlife numbers increase. There is currently sufficient forage on public lands in summer areas to support the expected increases in animal numbers without having to depend on the National Forest for additional forage. If at some time in the future a problem develops, needed adjustments can be made through coordination with BLM, USFS, and UDWR.

17.7 Comment: Page 1-26: Other options may be present in addition to sagebrush spraying. There is no objection to spraying, but good success has resulted from controlled burning.

Response: See Comment 8.1.

17.8 Comment: Page 1-28: We disagree with the statement on this page that project design limitations for sagebrush chaining and spraying projects conform with guidelines developed by the Western States Sage Grouse Committee. Those guidelines (1974) stated that vegetal control within the breeding complex will not be undertaken within two miles of strutting grounds. We believe the April 1, 1979, joint memorandum from the Utah Divison of Wildlife Resources; State Director, BLM; Regional Forester, FS; and State Conservationist, SCS is more appropriate than the guidelines.

Response: See Comment 13.2.

17.9 Comment: Page 1-34: We do not have a Dutch John Draw Allotment; it is the Goslin Mountain Allotment. The plan coordinates an allotment with the Flaming Gorge Ranger District.

Response: The text on Page 1-34 has been changed. See addendum section.

17.10 Comment: Page 2-49: Through the range survey, some knowledge is available on vegetation production. Range surveys provide a one-year estimate of production and are necessary to initiate a grazing allotment plan. What are the impacts from livestock and wildlife use in order to firm up the carrying capacity? Utilization of 60 percent cannot be assumed on all types of range but will depend on the range condition, slope, and soil. It appears that AUM allocations were made mainly from an occular range survey without actual grazing impact studies. Are followup studies included?

Response: See Monitoring and Study Programs section on Page 1-25.

17.11 Comment: Was unsuitable livestock range used in the wildlife allocation?

Response: Unsuitable range land for livestock was included in the estimate of AUMs allocated for wildlife.

17.12 Comment: Page 2-57: Table 2-3 states the antelope population is static. UDWR's trend count indicates an increase in this herd and has counted 443 pronghorn antelope in herd unit 6.

Response: See Comment 13.4.

17.13 Comment: Page 2-59: Goslin Mountain herd is estimated at 80 to 100 animals. A statement is made that "deer populations are well below habitat carrying capacity, with a slight upward trend (UDWR, 1972)." We suggest that current population estimates in relation to habitat carrying capacity may have drastically changed from 1972 since a "buck only" harvest was instituted at that time.

Response: Population estimates were made using best data available at the time of the writing of the ES. See Appendix II-7 for methodology of estimating populations.

17.14 Comment: Page 2-59: Increased recognition of wildlife habitat needs is appropriate. However, we question if the forage allocation for deer, as proposed, is realistic. Unless carrying capacity of the crucial winter range is significantly increased, large increases in forage allocation for wildlife throughout the management area are highly questionable.

Response: See wildlife assessment on Page 3-23.

17.15 Comment: Page 2-65 and 2-66: There are problems with the numbers in Table 2-15. For example, on the Taylor Flat Watson Allotment, estimated AUM production for deer winter use is 953, estimated AUMs used is 933, AUMs available for expansion is listed as 51. The difference between production and use is 20 AUMs.

Response: The problems noted in Table 2-15 are errors. You should be able to calculate AUMs available for expansion by subtracting estimates used from estimated produced. The text on pages 2-65, 66, and 67 has been changed. See addendum section.

17.16 Comment: The proposal is for continuous season-long grazing on some allotments with 60 percent allowable use on key forage species. Other than a few special instances such as grazing on wet meadows, crested wheatgrass seedings, or grazing during plant dormancy periods, we are unaware of data supporting this degree of utilization.

Response: On the Taylor Flat-Watson and Bridgeport allotments, wildlife objectives require the maintenance of a desirable browse species composition. Presently, utilization of key grass species may exceed 60 percent, and has not resulted in a downward trend nor increased the erosion rate.

Even though empirical data is lacking, it is the opinion of local range techicians and managers, based on observations, experience, and comparisons to similar allotments elsewhere, that conditions are either static or improving on all allotments in the planning unit, even though utilization of up to 60 percent has been allowed in the past.

However, for clarification of the proposal, the text on Page 1-24 has been changed. See addendum section.

17.17 Comment: Page 2-68: The pronghorn population estimate should be at least 443 and increasing, based upon UDWR counts.

Response: See Comment 13.4 and wildlife assessment on Page 3-23.

17.18 Comment: Can adjacent lands, private, state, and other federal, support the big game increases as listed in the future allocations? Only a portion of these herd numbers will migrate to the National Forest. As mentioned (2-59), the winter range is considered the limiting factor and will these areas support the nearly 6,000 AUM projected increase? We find little big game habitat improvement as new projects, realizing all water developments, spraying, and rested units will provide some big game benefits.

Response: See Comment 17.6.

17.19 Comment: Page 2-111: As stated on this page, big sagebrush will continue to increase on cattle allotments for the next 15 to 20 years. Rather than remain in stable or improve in range condition, the areas grazed by cattle would become increasingly dominated by big sagebrush. Big sagebrush already makes up more than 30 percent of the vegetation composition (the plan objectives state that desirable levels of big sagebrush are 20 to 30 percent of the composition) on 19 of the 39 allotments, while on another 3 allotments, big sagebrush make up 30 percent of the composition. Where big sagebrush now either equal or exceed desirable levels of the vegetaton composition, and under the proposal it is predicted that big sagebrush will increase on cattle allotments, it is impossible to meet stated objectives and maintain or improve useable forage production.

Response: This section describes the future environment "Without" the proposal. This should not be confused with the objectives under the proposal.

17.20 Comment: Page 3-4: This page discusses the probable impacts on water quality as a result of constructing 3.5 miles of fence to protect riparian areas. Under properly developed management schemes, we question the fencing needs.

Response: The analysis of this section was based on the best data available. Duff (1978), Kimball and Savage (1977) indicate that only exclusion of livestock will allow these habitat types to improve.

F. COMMENT LETTERS

The letters contained in this section were received in response to the draft environmental statement. The line and number at the left side of each letter provides a key to the comments and responses which appear in section E. Letters A, B, and C were included as Letters 1, 2, and 3 of Chapter 9 of the draft.

LETTER A

MARCH 3, 1849

United States Department of the Interior
FISH AND WILDLIFE SERVICE
AREA OFFICE COLORADO—UTAH
1426 FEDERAL BUILDING
125 SOUTH STATE STREET
SALT LAKE CITY, UTAH 84138

In Reply Refer To

March 22, 1979

MEMORANDUM

TO: District Manager, Bureau of Land Management
Richfield District

ACTING
FROM: Area Manager,
Area 5

SUBJECT: Endangered Species in the Three Corners Planning Unit

We have reviewed your list of candidate, proposed, and listed threatened and endangered species which occur within the Three Corners Planning Unit. We have nothing to add to that list.

We appreciate your providing us with the list. Your thoroughness aided our review of the project.

Thank you for your interest and cooperation in conserving endangered species.

LETTER B

COLORADO
HISTORICAL
SOCIETY

The Colorado Heritage Center 1300 Broadway Denver, Colorado 80203

February 5, 1979

Mr. Craig Harmon
EPS Archaeologist
Richfield District
150 East 900 North
Richfield, Utah 84701

Dear Mr. Harmon:

My concerns in the correspondence of October 13, 1978, have been clarified in a phone conversation of January 19, 1979. (1) All Cultural Resources will be salvaged if avoidance is not possible, not just those Eligible for inclusion in the National Register. I find this extension to All Cultural Resources acceptable. (2) The reference in par. III to 36 CFR 800 does, in fact, include consultation process with the Advisory Council.

Therefore, I find the Memorandum of Understanding between the BLM, Richfield District Office Utah, and the Utah State Historic Preservation Officer satisfactory.

Sincerely,

Arthur C Townsend

Arthur C. Townsend
State Historic Preservation Officer

ACT(BJL):ng
cc: B.Rippeteau, State Archaeologist
J.Hartmann, Coordinator, Historic Preservation

LETTER C

STATE OF UTAH
Scott M. Matheson, Governor
DEPARTMENT OF
DEVELOPMENT SERVICES

Michael D. Gallivan
Executive Director
104 State Capitol
Salt Lake City, Utah 84114
Telephone: (801) 533-5961

June 21, 1978

Craig Harmon
EPS Archaeologist
Bureau of Land Management
Richfield District Office
150 East 900 North
Richfield, Utah 84701

RE: Memorandum of Understanding for Three Corners Range Management EIS

Dear Mr. Harmon:

The staff has reviewed the enclosed memorandum of understanding and concur with its intentions. If properly implemented it will adequately protect cultural resources, although we would have liked a sample survey as part of the planning stages. This letter is not to be used as clearance for the EIS. We will comment when the draft EIS is prepared.

If you have any questions or concerns, please call or write Wilson G. Martin, Preservation Development Coordinator.

Sincerely,

Michael D. Gallivan
Executive Director
and
State Historic Preservation Officer

WGM:jr:8611

DIVISION OF: INDUSTRIAL PROMOTION · TRAVEL DEVELOPMENT · EXPOSITIONS · STATE HISTORY · FINE ARTS

CULTURAL RESOURCES
MEMORANDUM OF UNDERSTANDING
THREE CORNERS RANGE MANAGEMENT ENVIRONMENTAL STATEMENT
BETWEEN
THE BUREAU OF LAND MANAGEMENT
AND
THE STATE OF UTAH

1. Purpose

The Bureau of Land Management, hereinafter referred to as the Bureau, is preparing the Three Corners Range Management Environmental Statement (Three Corners ES) under the provisions of the National Environmental Policy Act of 1969. The Bureau has determined that cultural values could be damaged or lost as a result of actions proposed in the Three Corners ES. The following kinds of actions are proposed on public lands administered by the Bureau:

a. Vegetative manipulation,
b. Pipeline construction,
c. Spring development,
d. Reservoir construction,
e. Fenceline construction.

The Utah State Historic Preservation Office, hereinafter referred to as the State, is interested in assuring that cultural values in Utah be protected. The Bureau and the State have consulted and agree as to the measures, outlined in this agreement, which should be undertaken to protect these values should authorization be granted to use public lands in Utah administered by the Bureau for the purpose of any of the above mentioned proposed actions. In this agreement, "cultural resources" means data and sites which have archaeological, historical, architectural, or cultural importance and interest. Investigators will be qualified to evaluate these "cultural resources." Qualifications of investigators will be submitted to the State Historic Preservation Officer.

II. Authority

This agreement is authorized under the Federal Land Policy and Management Act of 1976 and the National Historic Preservation Act of 1966. It is in accord with Bureau policies and programs. It does not abrogate nor amend any other agreement between the Bureau and the State.

III. Responsibilities and Procedures

The Bureau will comply with 36 CFR 800 in identifying sites which are listed in or eligible for inclusion in the National Register of Historic Places.

A. As part of the planning and environmental analysis required prior to major grazing management decisions, the Bureau will search for archaeological and historical literature concerning the Three Corners area. Literature and records searches have been conducted for all public lands that would be affected by the Three Corners proposal.

B. After completing the planning and environmental analysis process, should the proposed management be implemented, the Bureau will enforce the following stipulations:

1. Prior to initiation of ground-disturbing activities, literature searches and intensive surveys will be undertaken on all areas which would be disturbed.

2. Wherever possible and feasible, cultural resources will be avoided by construction and related activities. This will be accomplished mainly by

regulating vegetative manipulation and spring development activities and adjusting the location of other facilities such as pipelines and fences. Significant cultural resources facing inundation due to proposed reservoir construction will be salvaged to recover data that would otherwise be lost.

3. A professional archaeologist may be required to be present when ground-disturbing operations are underway.

4. Subsurface cultural resources that are encountered during any construction will be salvaged if there is no other recourse in such a situation.

C. Wherever it is not possible and feasible to avoid sites that contain cultural values, the Bureau will consult with the State to determine the most satisfactory means of mitigating damage, as required by 36 CFR 800.

D. The Bureau will provide cultural resource reports, technical reports, and other pertinent material to the State.

E. The State will provide the Bureau with a letter, for use as an exhibit in the Three Corners ES, to the effect that the procedures herein proposed by the Bureau, if correctly implemented, will satisfy the State's interest.

IV. The attached list identifies the specific actions that the Bureau anticipates will be included in the Three Corners ES. The list may be brought up to date, as necessary, without amending this agreement in any way.

V. Implementation

A. This agreement will become effective on the date of the last signature on this agreement.

B. Either party may request revision or cancellation of this agreement by written notice, not less than 30 days prior to the time when such action is proposed.

C. Any problems resulting from this agreement which cannot be resolved by the Bureau and the State will be referred to the Secretary of the Interior and the Governor of Utah for resolution.

DATE 8/17/78

Paul L. Howard
UTAH STATE DIRECTOR
BUREAU OF LAND MANAGEMENT
DEPARTMENT OF THE INTERIOR

DATE July 31, 1978

UTAH STATE HISTORIC PRESERVATION
OFFICER

LETTER NUMBER 1

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
REGION VIII
FEDERAL OFFICE BUILDING
19TH AND STOUT STREETS
DENVER, COLORADO 80294

June 14, 1979

OFFICE OF THE
PRINCIPAL REGIONAL OFFICIAL

Mr. Lloyd H. Ferguson
District Manager
Bureau of Land Management
Vernal District Office
170 South 5th East
Vernal, Utah 84078

Dear Mr. Ferguson:

We have reviewed your Draft Environmental Statement describing the proposed grazing management program on the Vernal District's Three Corners Planning Unit.

We do not believe the proposed action will be detrimental to matters pertinent to health or education.

Thank you for the opportunity to review this Statement.

Sincerely yours,

Thomas E Moore
Thomas E. Moore, P.E.
Director, ROFEC
Regional Environmental Officer

LETTER NUMBER 2

**Advisory
Council On
Historic
Preservation**

1522 K Street N.W.
Washington D.C.
20005

Reply to: **P. O. Box 25085
Denver, Colorado 80225**

June 28, 1979

Mr. Lloyd H. Ferguson
District Manager
Vernal District Office
Bureau of Land Management
170 South 5th East
Vernal, Utah 84078

Dear Mr. Ferguson:

This is to acknowledge receipt of the draft environmental statement for the Three Corners Grazing Management, located in the northeast corner of Utah, approximately 20 miles north of Vernal, Utah and approximately 45 miles south of Rock Springs, Wyoming, on June 11, 1979. We regret that we will be unable to review and comment on this document in a timely manner pursuant to Section 102(2)(C) of the National Environmental Policy Act of 1969.

Nevertheless, the Bureau of Land Management is reminded that, if the proposed undertaking will affect properties included in or eligible for inclusion in the National Register of Historic Places, it is required by Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. Sec. 470f, as amended, 90 Stat. 1320) to afford the Council an opportunity to comment on the undertaking prior to the approval of the expenditure of any Federal funds or prior to the issuance of any license. The Council's regulations, "Protection of Historic and Cultural Properties" (36 CFR Part 800.4) detail the steps an agency is to follow in requesting Council comment.

2.1 Generally, the Council considers environmental evaluations to be adequate when they contain evidence of compliance with Section 106 of the National Historic Preservation Act, as amended. The environmental documentation must demonstrate that either of the following conditions exists:

2.1 1. No properties included in or that may be eligible for inclusion in the National Register are located within the area of environmental impact, and the undertaking will not affect any such property. In making this determination, the Council requires:

--evidence that the agency has consulted the latest edition of the National Register (Federal Register, February 6, 1979, and its monthly supplements);

--evidence of an effort to ensure the identification of properties eligible for inclusion in the National Register, including evidence of contact with the State Historic Preservation Officer, whose comments should be included in the final environmental statement.

2. Properties included in or that may be eligible for inclusion in the National Register are located within the area of environmental impact, and the undertaking will or will not affect any such property. In cases where there will be an effect, the final environmental statement should contain evidence of compliance with Section 106 of the National Historic Preservation Act through the Council's regulations, "Protection of Historic and Cultural Properties".

Should you have any questions, please call Jane King at (303) 234-4946, an FTS number.

Sincerely,

Louis S Wall

Louis S. Wall
Chief, Western Office
of Review and Compliance

LETTER NUMBER 3

Uintah Basin Association
of Governments
P.O. BOX 1449
ROOSEVELT, UTAH 84066
(801) 722-4518

July 6, 1979

Bureau of Land Management
Department of the Interior
Vernal District Office
170 South 5th East
Vernal, Utah 84078

RE: Three Corners Grazing Management Plan

As part of the regular review function, the Uintah Basin Association of Governments considered the Draft EIS on the Three Corners Grazing Management Plan. We do not feel the draft is in acceptable form at this time.

3.1 The problem areas not solved were:

1. Changes in grazing allocations diverting AUM's to wildlife rather than to livestock are not supported by need;
2. Range improvement practices - expecially water priorities - should be accelerated faster;
3. Livestock owners pay a large share of improvements and should be rewarded with AUM increases.

These considerations cause us concern and we feel the plan needs to be oriented to permit holders.

More detail is also needed to insure long range plans as grazing plans are implemented to insure long time use of AUM.

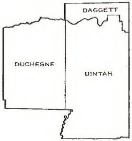
Sincerely,

Clinton C. Harrison

Clinton C. Harrison
Executive Director

CCH/ls

cc: Carol Jones, State Planning



Uintah Basin Association
of Governments
P. O. BOX 867
(801) 722-3413
ROOSEVELT, UTAH 84066

AREAWIDE CLEARINGHOUSE A–95 REVIEW

Type of Action: Pre-Application _____ Notification of Intent _____ Application _____
Notice of Federal Action _____ FOR COMMENT ONLY

Receipt Date 6-21-79 SAI Number 790607038 ACH Number _____

Applicant Identification, Address
US Dept. of the Interior - BLM
Vernal District Office 170 S 5th E Vernal, Utah 84078
Lloyd H. Ferguson

Applicant's Project
Title: Three Corners Grazing Management Draft
Description:

Funding	
Federal	$
Supplemental	
State	
Local	
Other	
TOTAL	$

Federal Funding Department and Agency

AREAWIDE CLEARINGHOUSE COMMENTS ON PROPOSAL FOR FEDERAL AID

Staff review completed (date) _____
Screening Committee review completed (date) _____
Executive Board Review Completed (date) 6-27-79
Referred to originator for additional information (date) _____

☐ Recommend Approval _____ Comments (see reverse side of page) _____
☐ Conditionally approved as follows (see reverse side of page) _____
☑ Recommend Disapproval _____ Comments (see reverse side of page) _____

☑ The project described above ( ) does (✓) does not conform with the policy or planning of the multijurisdictional area it directly impacts. Additional information (✓) is ( ) is not needed.

☐ We also serve notice that all requirements of the Project Notification and Review System for this multijurisdictional area have been met. Therefore, attach this letter to your application and forward to the federal funding agency.

☐ If this project will be a renewal or continuation grant, please submit your application next year to this areawide clearinghouse for re-review 30 days prior to submission to federal funding agency.

If any Clearinghouse Comments go unresolved, Federal law requires the Applicant to attach a copy of all negative comments to the project application and forward them both to the Federal Funding Agency(ies).

Clinton C. Harrison
Authorizing Official

6-27-79
Date

LETTER NUMBER 4

United States Department of the Interior
GEOLOGICAL SURVEY
RESTON, VA. 22092

OFFICE OF THE DIRECTOR

In Reply Refer To:
EGS-DES-79/32
Mail Stop 760

JUL 13 1979

Memorandum

To: District Manager, Bureau of Land Management
Vernal, Utah

Through: Assistant Secretary--Energy and Minerals

JUL 17 1979

From: Acting Director, Geological Survey

Subject: Review of draft environmental statement for grazing management program, Three Corners Planning Unit, Utah and Colorado

We have reviewed the draft statement as requested in your notice.

4.1 The description of the existing environment (ch. 2) should include the
occurrence, quality, and use of ground water; this information is especially needed in view of the stress on wells and springs in the program.
Locations of springs and wells should be shown on the water resources
map (fig. 1-8) or on another suitable map. According to appendix II-3,
ground water must contribute a major portion of the consumptive use;
plans for spring development (e.g., table 1-8) suggest that indeed the
4.2 use of ground water will be increased. The potential for impacts on
ground-water quantity and quality from such use and from range maintenance procedures such as the use of herbicides should be addressed
in the statement.

Henry W. Coulter
Acting Director

LETTER NUMBER 5

Utah Wool Growers

10 WEST 100 SOUTH
SUITE 600
SALT LAKE CITY, UTAH 84101
TELEPHONE 359-3972

OFFICERS

SAM CHOURNOS
Tremonton
President

HATCH HOWARD
Woods Cross
Vice President

CLAIR R. ACORD
Executive Secretary

EXECUTIVE COMMITTEE
JIM CARAS
STEPHEN T. GILLMOR, JR.
H. WENDELL JONES
MRS. METTA RICHINS
ALLAN E. SMITH
RAY STALEY
VERN WILSON

BOARD OF DIRECTORS
WELBY AAGARD
WESLEY AAGARD
WAYNE BUTTERFIELD
DARRELL BYRAM
GERALD CANNON
JIM CARAS
DEAN CHEW
DAVID CHRISTENSEN
GEORGE COOMBS
DONALD COX
DON FITZGERALD
KAY FRISCHKNECHT
BRANT GEORGE
STEPHEN T. GILLMOR, JR.
GLEN HALTERMAN
DEAN HANSEN
JIM HATCH
G. HATCH HOWARD
STUART JOHNSON
GLENN R. KELLER
EDWIN O. LARSEN
ALTON MOON
ROGER PEART
HARDY REDD
METTA RICHINS
RUSSELL SEVY
ALLAN E. SMITH
RAY STALEY
JOHN TINKER
WARREN WILLIAMS
VERN WILSON
JOHN WINTCH
MALCOLM YOUNG

July 17, 1979

Mr. Lloyd H. Ferguson
District Manager
Bureau of Land Management
Vernal District Office
170 South 5th East
Vernal, Ut. 84078

Dear Mr. Ferguson:

We have reviewed the draft of the Three Corners Grazing Management EIS.
In your numerous suggestions and alternatives it is our position any additional AUM's developed should be for domestic livestock and they be given priority over wildlife in AUM's.

5.1 Though as you state the domestic livestock income is only a small part of Uintahs or Daggetts Counties income it's a basic income, it's using a renewable resource that could not be used in any other way and it is producing food and fiber for the economy of the state, nation, and world.
An observation, you do not give much consideration to individuals nor to the economy it has as on the small community.

Sincerely,

Sam Chournos

Sam Chournos, President
Utah Wool Growers

LETTER NUMBER 7

WHOA!

WILD HORSE ORGANIZED ASSISTANCE
INC.
A Foundation for the Welfare of
Wild Free-Roaming Horses and Burros

P. O. Box 555
Reno, Nevada 89504
Telephone 323-5908
Area Code 702

BOARD OF TRUSTEES
DAVID R. BELDING
JACK C. McELWEE
GORDON W. HARRIS
BELTON P. MOURAS
GERTRUDE BRONN, Honorary
In Memoriam
LOUISE C. HARRISON
VELMA B. JOHNSTON, "Wild Horse Annie"

July 19, 1979

Mr. Lloyd Ferguson, District Manager
Bureau of Land Management-Vernal
170 South 500 East
Vernal, Utah 84078

Dear Mr. Ferguson:

We apologize for being unable to attend the July 12th meeting in Vernal regarding the DES for Three Corners. In lieu of a lack of information, as the DES available only in Utah, we still wish to strongly emphasize our position to the impacts alluded to in the BLM News Release. Especially as it pertains to wild horses.

According to the Environmental Quality of 1978; 16% of the public lands are declining; 65% static; and 19% improving. Reflecting the proposed DES to continue existing livestock grazing and to eventually increase, one would have to assume that Three Corners falls within the 19% improving sector. It may be possible for pressures to be relieved, if other than livestock were to be reduced. The announcement did not allude to this fact so we are assuming as has happened in other DES that wild horses will be greatly reduced. Not knowing this for a fact we question any serious attempt to improve range conditions when not looking at the total impact.

Utah has been historically protective of it's livestock and big game industry considering the economic factor involved. However, we also would like to see the Bureau not abrogate itself of its total responsibility in protecting, managing, and controlling the wild horse populations. The disruption of their habitat undeningly a factor in their protection.

We strenuously object to the current Bureau-wide policy of "fencing" the West so as to make management easier. Neither wildlife nor wild horses benefit from obstruction by fences when actually it has been tragically proven otherwise. With the extreme costs per mile and the additional improvements, the economic factor alone is prohibitive. In light of Civil No 77-330 we would seriousl question any spring or reservoir development that would not benefit ALL public land users. In Utah and Nevada I have seen time and time again, wells developed on public lands, with the pumps provided by operators, shut down when livestock were not present....while at the same time wild horses were being removed because of so-called drought situations.

We wonder why the DES must propose either a static number of a 50% reduction, or the complete removal. Why must it be the extremes. WHOA! is not in the business to eliminate the livestock industry... we are for fair recognition of the horses' rights.

Page two

In the nip-and-gnaw atmosphere that surrounds the debates on whether a particular use is desirable, it is simple for the rancher-oriented disputants to lose sight of the fact that the public land mandate is clear: those government lands are to be managed for multiple use--it's not man alone, and his livestock, who was the intended beneficiary.

I am sure I have missed some relative points, having not viewed the DES, however, please consider these comments offical for the Draft ES.

Most sincerely,

Dawn Y. Lappin

Dawn Y. Lappin (Mrs.)
Chairman

LETTER NUMBER 8

United States Department of the Interior
NATIONAL PARK SERVICE
ROCKY MOUNTAIN REGIONAL OFFICE
655 Parfet Street
P.O. Box 25287
Denver, Colorado 80225

IN REPLY REFER TO:
L7619 (RMR)PC
DES 79/32

JUL 23 1979

Memorandum

To: District Manager, Vernal District Office, Bureau of Land Management, Vernal, Utah

From: Associate Regional Director, Planning and Resource Preservation, Rocky Mountain Region

Subject: Three Corners Grazing Management Draft Environmental Statement (DES 79/32)

The National Park Service has reviewed the subject document and has the following comments.

It would be most useful if the chapter titles were included in the Table of Contents. The similarity of subheadings makes it difficult to find the desired chapter.

8.1 Pages 1 - 2, 23, 26: Sagebrush control is proposed by spraying with 2, 4-D and by chaining. One result of this is a loss of aesthetic values and probably a need for reseeding. Personnel at Dinosaur National Monument have noticed that fires on nearby Bureau of Land Management (BLM) lands (e.g., Plug Hat) allowed natural reproduction of native grasses and appeared to improve range forage conditions. The recovery rate appears to be shorter than that for chemical control, making the range useable within a year or two. We believe controlled burns should be considered as an alternative means of sagebrush reduction.

8.2 Page 1 - 25: Item 5 should note the need to adhere to the requirements of Executive Order 11593.

8.3 Page 1 - 34: We believe a reexamination is needed of some of the assumptions under the National Park Service section. Dinosaur National Monument encourages its neighbors to fence livestock out of the monument. We believe the assumption that the Service would construct and maintain a fence is open to negotiation. Moreover, the Service has always and will continue to manage grazing activities within the monument. The statement that "BLM will continue to administer the grazing for both agencies" is erroneous.

CONSERVE AMERICA'S ENERGY

Save Energy and You Serve America!

Additionally, we believe the statement, as written, places the National Park Service in a poor light as contributing to a loss of grazing in the area. We recommend the entire section be rewritten as follows and let the reader draw his or her own conclusions:

> "The Wild Mountain grazing allotment includes both public land administered by BLM and Dinosaur National Monument. The National Park Service has issued grazing permits for three operators within the allotment. Two of these permits expire in 1985 and will not be renewed."

8.4 Page 2 - 1: The section on "Air Quality" should note that there is an air quality measuring station for particulates at Dinosaur National Monument headquarters.

8.6 Page 2 - 57: There is no mention in the "Animal Life" section about black bear or cougar as wildlife; yet hunting of these species is mentioned under "Recreation Resources" on page 2-88, and cougar is mentioned again on page 2-112.

8.7 Page 2 - 68: There is no mention of the bighorn sheep population (though small in number) that inhabits portions of the Wild Mountain area in the vicinity of Pot Creek and nearby areas. The Dinosaur National Monument staff have observed bighorn from Little Hole on the north along the Green River down to the Wild Mountain and Bowery Spring allotments.

8.8 Page 2 - 79: The discussion of peregrine falcons should be expanded to recognize that an active aerie has been identified in Dinosaur National Monument at Steamboat Rock just below the Wild Mountain allotment. The peregrine could be expected to use the air space above the allotment.

8.12 The discussion of upland game should recognize that chukar partridge have been introduced into Dinosaur National Monument and have been observed on the fringes of the planning area.

8.9 Page 2 - 112: We believe a biased position can be read into the discussion on "Water Resources." Water quality was purest when only wildlife used the land. Adding recreation visitor use leads one to believe only livestock grazing can maintain the water quality.

8.10 The "Cultural Resources" and "Paleontological" sections mention impacts of increased visitation and weathering, but we note that nowhere in the document is there a discussion of how these effects would be mitigated.

LETTER NUMBER 8

Page 2 - 113: Again, bias in favor of livestock grazing appears to be present in the discussion on "Livestock Grazing." We believe it is common knowledge that sagebrush will increase with the overuse of range grasses.

8.11 Under "Social-Cultural Values," we question whether "the social environs would continue to place a high value on agriculture and livestock grazing." The last sentence of the paragraph seems to contradict this, perhaps indicating that agriculture and grazing no longer have a high value.

8.5 Page 3 - 1: Air quality impacts are written off as insignificant. Yet the chaining operations will create abnormal levels of dust. Additionally, no mention is made of how the cleared sagebrush would be disposed of. If burned, this would also contribute to lessened air quality.

8.12 Page 3 - 20: The "Animal Life Analysis Section" has no discussion of bear, cougar, bighorn, or chukar as mentioned above.

8.8 Page 3 - 21: The "Threatened or Endangered Species" section should discuss peregrine falcons as mentioned above.

8.2 Page 3 - 24: The "Conclusions" section for impacts on cultural resources should include surveys done in compliance with Executive Order 11593.

8.13 Page 5 - 2: Again, we believe bias has crept into the "Socioeconomics" section. In the long term, we believe educational efforts can break down barriers of mistrust between the public and the land manager. This section, as written, could be used as an excuse by the land manager to not carry out the best range management practices, feeling that it wouldn't be acceptable with the local populace anyway.

8.14 Page 6 - 2: The "Cultural and Paleontological Resources" section, as written, could lead the reader to believe there is nothing one can do about the loss of these resources. We suggest the statement be reworded to address results that might occur from mitigation measures, such as surveys, and avoidance, mentioned in the letter from the Colorado State Historic Preservation Officer.

Richard A. Strait

LETTER NUMBER 9

United States Department of Agriculture
Soil Conservation Service
4012 Federal Building
125 South State Street
Salt Lake City, UT 84138

July 24, 1979

Lloyd H. Ferguson, District Manager
Vernal District Office
U.S. Bureau of Land Management
170 South 5th East
Vernal, UT 84078

Dear Mr. Ferguson:

We have reviewed the Draft Environmental Statement for Grazing Management in the Three Corners Planning Unit. It adequately addresses the main points of consideration where SCS has interest and expertise.

The summary indicates that 61% of the planning area is public land, 33% is privately owned and 6% is state lands. The entire area will apparently be managed by BLM as a unit. What input have the private interests had in the management alternatives considered?

With one-third of the land owned by private ranchers and operators and only part of the private land being fenced, the Soil Conservation District and individual operators should be fully involved in the development of management plans.

We appreciate the opportunity to review and comment on this grazing management plan and environmental statement.

George D. McMillan

GEORGE D. MCMILLAN
State Conservationist

LETTER NUMBER 10

COOPERATIVE EXTENSION SERVICE
UTAH STATE UNIVERSITY
UMC 49
LOGAN, UTAH 84322

Utah State University and the U. S. Department of Agriculture Cooperating

July 20, 1979

Mr. Lloyd Ferguson, District Manager
Bureau of Land Management
170 South, 500 East
Vernal, Utah 84078

Dear Mr. Ferguson:

Please consider the following comments and suggestions on the "Draft Three Corners Grazing Management Environmental Statement".

The Three Corners Planning Unit appears to be an area where conflicts and problems have been dealt with adequately in the past. The proposed action presented in the EIS draft appears to be a logical and appropriate course of action and is especially strong from the standpoint of proposed monitoring activities. It is my feeling that resource monitoring activities should be the first priority for land managers whose charge is to manage the range resource. Only with the information provided through monitoring activities can cause and effect relationships be identified and status of the basic range resource (soils and vegetation) be accurately estimated.

It is suggested that, in the future, if forage usable by livestock becomes available, additional allocations to livestock be considered. Considerations should include any identified competitive relationships with other users such as wildlife, and should be addressed on an allotment-by-allotment basis. This suggestion is made in light of reductions in livestock grazing use that have occurred in the past and the need for energy-efficient food and fiber production in the future. It seems appropriate to restore or increase AUM's of livestock use where it is consistent with conservation of the range resource and compatible with the charge to manage public rangelands for a variety of uses. Increasing livestock grazing use where appropriate serves as an incentive for rancher-permittees to cooperate and use wise range and livestock practices on their BLM allotments and their private rangeland.

Thank you for the opportunity of reviewing and commenting on the draft environmental statement.

Sincerely yours,

Roger E. Banner

Roger E. Banner
Extension Range Specialist

REB:pjn

The Utah Cooperative Extension Service, an equal opportunity employer, provides programs and services to all persons regardless of race, sex, religion, color or national origin

---

LETTER NUMBER 11

United States Department of the Interior

BUREAU OF RECLAMATION
UPPER COLORADO REGIONAL OFFICE
P.O. BOX 11568
SALT LAKE CITY, UTAH 84147

IN REPLY REFER TO: UC-743
706.

JUL 31 1979

Memorandum

To: District Manager, Bureau of Land Management, Vernal District Office, Vernal, Utah 84078

From: Acting Regional Director

Subject: Review and Comments of Draft Three Corners Crazing Management Environmental Statement (DES 79-32)

We appreciate the opportunity to review and comment on the subject DES, Three Corners Grazing Management Environmental Statement.

Except for numerous spelling and typographical errors that will be corrected during your editorial review, we find the draft statement to be generally well prepared. Since the proposed action, determination of grazing management, will have little or no direct impacts on Bureau of Reclamation Projects either existing or proposed, we have no specific comments.

We recognize that any action to improve watershed conditions will have an impact on the quality and quantity of streamflows in the major river drainages of the area and is both beneficial and essential to Reclamation programs. We also feel, however, that this can best be accomplished through the concept of multiple use and that this concept should be preserved in the administration of public lands.

11.1 The impact of complete elimination of grazing, as an alternative to the proposed action, has not been fully explored. It goes beyond the loss of income to ranch operations. It would have an impact on the total economy of the area including the Vernal and Jensen areas which both have agricultural economies supported by existing Reclamation projects.

LETTER NUMBER 12

DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT, CORPS OF ENGINEERS
650 CAPITOL MALL
SACRAMENTO, CALIFORNIA 95814

REPLY TO
ATTENTION OF

SPKED-W

30 July 1979

District Manager
Bureau of Land Management
Vernal District Office
170 South 5th East
Vernal, UT 84078

Dear Sir:

The draft environmental statement for the Three Corners Grazing Management area in the northeast corner of Utah has been reviewed as it relates to our jurisdictional responsibilities.

12.1 There are no Corps of Engineers projects or anticipated water resource developments in the area that would be affected by the proposed action. We do have a responsibility to regulate the discharge of dredged or fill material into waters of the United States or wetland areas pursuant to Section 404 of the Clean Water Act (33 USC 1344). Water developments in the planning unit are included under the management plan, but the information provided is insufficient to determine whether a Department of the Army permit would be required.

We have no other comments but appreciate the opportunity to review the draft environmental statement.

Sincerely,

Joseph D. Countryman
GEORGE C. WEDDELL
Chief, Engineering Division

LETTER NUMBER 13

STATE OF UTAH
Scott M. Matheson
Governor
Kent Briggs
State Planning Coordinator

Division of Policy and Planning Coordination
Intergovernmental Relations Section
Lorayne Tempest, Assistant State Planning Coordinator
124 State Capitol
Salt Lake City, Utah 84111
533-4981

A/95
State Clearinghouse
533-4976
533-4971

Environmental
Coordinating
Committee
533-5794

Human Resources
Coordinating
Committee
533-6081

A/85
Federal/State
Coordination
533-6083

Federal Resource
Information
Center
533-4983

July 30, 1979

Mr. William Leavell
Acting Director
Bureau of Land Management
U.S. Department of the Interior
Salt Lake District Office
2370 South 2300 West
Salt Lake City, Utah 84119

Dear ~~Mr. Leavell~~ Bill:

SUBJECT: Three Corners Grazing Management Draft Environmental Impact Statement, State Application Identifier Number 790607038

Enclosed please find the comments of the Utah State Environmental Coordinating Committee on the Three Corners Grazing Management Draft Environmental Statement. The only agency choosing to comment was the Division of Wildlife Resources and the ECC has adopted the comments of that agency as a whole.

The Committee would like to recommend that the Bureau of Land Management more closely follow the applicable habitat guidelines set up for the sage grouse, and that more appropriate vegetational controls be utilized where possible to protect other wildlife. More detailed comments are enclosed for your review. Thank you for considering these recommendations.

Sincerely,

Kent
Kent Briggs
State Planning Coordinator

KB:cmj

Enclosure

state of utah

DIVISION OF WILDLIFE RESOURCES
EQUAL OPPORTUNITY EMPLOYER
DOUGLAS F. DAY
Director
1596 West North Temple/Salt Lake City, Utah 84116/801-533-9333

LETTER NUMBER 13

July 25, 1979

Mr. Milo Barney, Chairman
Environmental Coordinating Committee
Department of Natural Resources
400 Empire Building
231 East 400 South
Salt Lake City, Utah 84111

Dear Milo:

We have reviewed the Three Corners Grazing Management Draft Environmental Statement and have the following comments.

Terrestrial Wildlife

13.1 Our principal concern centers on the management direction on seven allotments. The seven in question are Clay Basin, Antelope Flat, Goslin Mountain, Little Hole, Sears Canyon, Jackson Draw and Willow Creek. All or a portion of each of these allotments are winter range for deer, elk and antelope; and as such, the winter range portions of each should be managed to maintain or improve browse forage. The indicated long-term result of implementing the proposed BLM grazing action is conversion of forage on these allotments from browse to grass. As winter range remains the limiting factor on big game populations in this area, it would be unacceptable to decrease forage quality for big game on any winter range allotments. Spring livestock grazing must be used when necessary to maintain favorable game range conditions. We trust that this management tool will be used and that the final environmental impact statement will indicate this management direction.

13.2 Sagebrush sprays on selected allotments are mentioned in several places in the ES. Ruple Cabin, Davis Draw and Crouse Reservoir allotments have sage grouse use areas and any vegetational control on these areas should closely follow the sage grouse habitat guidelines, unless alternatives are mutually agreed upon with the state wildlife agency.

In addition to spraying for sagebrush control, prescribed burning should be considered as an important option. We feel that in many, if not most, situations burning would be preferred biologically, esthetically and economically.

13.4 Our most recent aerial count on the Daggett antelope herd unit in April 1979 showed 443 animals (excluding the Bridgeport allotment which has an estimated 25 antelope). We feel that we count about 85 percent of the total antelope on our aerial counts. Thus, we estimate a total 546 antelope in the Daggett herd; including the 25 in Bridgeport. Approximately 63 percent (or 345 antelope) range on BLM land. A forage allocation of 431 AUM's would be necessary just to support the existing population.

GOVERNOR
Scott M. Matheson

DEPT. OF NATURAL RESOURCES
Gordon E. Harmston
Exec. Director

WILDLIFE BOARD
Roy L. Young Chairman
Lewis C. Smith L. S. Skaggs
Warren T. Harward Chris P. [illegible]

13.4 Removal of sheep permits from the antelope range on Antelope Flat, Clay Basin and Goslin Mountain several years ago has resulted in what we feel are improved range conditions. Antelope numbers have increased over the past two years. We feel, under present cattle grazing management, that this area would support about 800 antelope with an additional 75 head at Bridgeport. Approximately 550 animals could be supported on BLM range, with the remaining 325 on Forest Service, state and private lands. A forage allocation of 687 AUM's on BLM land would support this population level. This is about 307 AUM's more than is provided for in the BLM proposed action. The sharp increase in antelope numbers the past two years would indicate that perhaps space is not as critical a limiting factor as range conditions, which have improved, and sheep-antelope competition, which has been eliminated. BLM studies indicate very minimal competition between antelope and cattle on these allotments.

13.5 Mention is made in the ES that the Rye Grass allotment, which is reserved for big game, will eventually go to grass with the loss of favorable browse conditions. This allotment will be maintained with a forage composition favorable to big game. This may require periodic spring livestock grazing on selected areas.

13.6 Both black bear and cougar should be included in the Animal Life section as game animals that are present on the planning unit. Blue and ruffed grouse should be included in the upland game section on page 2-79.

13.7 Summary, item 3, should state the expected decrease in quality of winter range on a substantial number of allotments.

13.8 Page 1-1, second paragraph, the first sentence lists 326,083 acres in the planning unit but Table 1-1, page 1-3, lists 282,796 acres.

13.9 Page 1-5, Figure 1-2, the landownership map including the back folder should be changed to show UDWR ownership of the lands adjacent to the Green River at Bridgeport and BLM ownership of the Campbell Ranch. Also, UDWR owns 160 acres immediately south of Matt Warner Reservoir in the W 1/2 SW 1/4 Sec. 1 and E 1/2 SE 1/4 Sec. 2, T. 1 S., R. 2, 3, E.

Page 1-9, Table 1-3 and page 1-19, Figure 1-4, we acknowledge the livestock MFP-1 and MFP-2 recommendations to change the season of use and continue management emphasizing big game winter forage on this strategic big game winter range. Reseeding of 1,600 acres of BLM land and 300 acres of state of Utah land in the Taylor Flat allotment adequately justifies inclusion in this.

13.10 Page 1-13, item 8, the figure 3,458 appears to be incorrect, as it does not total with 4,838 to give 6,091 AUM's.

13.11 Page 13, item 9, the figure of 355 initial AUM's does not agree with the summary page (378 AUM's), nor does the long-term 380 AUM's agree with that given on page 3-23 (405 AUM's).

LETTER NUMBER 13

13.12 Page 13, item 10, the figure of 2,226 should read 2,229; and 10,296 should be 10,299 to be consistent with data on the summary page and pages 1-17 and 3-23.

Page 1-18, second paragraph, it will be difficult to turn AUM's back to wildlife once they have been used by livestock even on a temporary basis.

Page 1-22 and 1-23, care should be taken that the proposed spraying of 1,260 acres of sagebrush in the Ruple Cabin and Hay Mountain allotments does not detrimentally impact deer and sage grouse.

Page 1-27, Implementation, the Division of Wildlife Resources requests review of the AMP's as they affect wildlife.

13.2 Page 1-28, all sage grouse habitat guidelines should be followed. These involve more than just distance to strutting grounds from sprays.

Page 1-28 and 1-29, any new fences should not exceed 42" maximum height.

13.13 Figure 2-13, Important Sage Grouse Areas, is incomplete. Updating of the map showing additional sage grouse strutting grounds and wintering areas should be done using information available at the Utah Division of Wildlife Resources Northeastern Regional office in Vernal, Utah.

13.4 Page 2-68, Pronghorn Antelope, our current estimate of antelope numbers in the Antelope Flat-Clay Basin-Goslin Mountain-Willow Creek area is 328 on BLM land. While the herd is definitely limited by space, current indications are that the ES figures are much too restrictive and even below present population levels.

13.6 Page 2-79, Upland Game, it should be noted that blue grouse also inhabit portions of the planning unit.

Page 2-86, third and ninth paragraphs, it should be noted that the 1979 Utah Legislature gave protected status to the bobcat, reptiles and amphibians.

Page 2-86, fifth paragraph, river otter should be included in this list of managed aquatic furbearers. The status of the otter is unknown, but they are protected under the furbearer proclamation.

13.14 Page 2-112, Animal Life, all of the impacts described here will likely occur with or without the project. The future without the proposed action should address the result of browse winter range areas remaining as browse winter areas. This and other changes are related to the action addressed by the ES.

13.15 Page 3-19, Relationship to Proposed Action, last paragraph, the statement that the objective would be met in improving or maintaining habitat for deer directly contradicts the first paragraph on the right-hand column on this same page. The same is true of statements on page 3-20 concerning antelope objectives. Objectives of improving habitat for deer and antelope will require maintaining an optimum vegetative composition on winter ranges.

13.16 Page 5-1, Animal Life, first paragraph, the Rye Grass allotment should be deleted from this list and Jackson Draw and Sears Canyon should be included.

13.2 Page 5-1, Animal Life, third paragraph, negative impacts on sage grouse should be minimal if sage grouse habitat management guidelines are followed.
13.3 Also, the first sentence is contradictory to statements in the second and third paragraphs on page 1-24, which describe management of grazing to enhance big game habitat and forage in the Red Creek, Taylor Flat, Watson and Bridgeport allotments.

13.17 Page 6-1, Vegetation and Forage, first paragraph, the statements that big sagebrush will decrease on "all" areas of the planning unit is inconsistent with other statements in the document. This would be true of only the allotments without spring livestock grazing. The entire paragraph contradicts the projections made on pages 3-7 and 3-8 under Composition and Vegetation Ground Cover. This same contradictory statement is made at the bottom of page 6-1, under Animal Life, in sentence one. Sentence three in this paragraph states that general improvement in wildlife habitats would occur "with certain exceptions." Those exceptions are deer and antelope which are two of the three big game species being assessed. The sentence should be changed to read that big game habitats will generally decrease in value with the exception of elk.

13.18 Page 6-2, second paragraph, the statement that a long-term decline in deer numbers would be expected, contradicts several other statements, including that on page 3-41, first column, paragraph two.

13.19 Page 7-1, Animal Life, sage grouse range should not be negatively affected. This statement appears to indicate that measures to protect sage grouse habitat discussed in other sections of the ES will not be followed. What direction will be followed?

Aquatic Wildlife

13.20 The ES attempts to describe aquatic wildlife values, especially fishery values, on essentially uninventoried, unclassified streams. Table 2-18 (page 2-84) seems to assess the present fishery status of the waters as well as expected, considering the data shortage. Similarly, Table 2-19 (page 2-85) describes physical habitat conditions in a consistent, if not vague, manner.

The Green River fishery is described as a community of cutthroat, rainbow and brown trout, and flannelmouth suckers. Populations of trout are generally described as stable or increasing. However, the tributaries are generally described as "unknowns" in reference to fishery populations. Fish habitat is described as "poor" in 11.1 streambank miles (or presumably 5.55 stream miles)

LETTER NUMBER 13

13.20 in the Bridgeport, Watson and Road Crossing allotments. It is assumed, then, that fishery conditions also are "poor," not stable or increasing.

13.21 Table 1-3 (Rationale for MFP-2 Recommendations), it is stated that "Exclusion of livestock from all streams and riparian areas is of questionable practicability." Don Duff (BLM fish biologist) and Dr. William Platts (USFS grazing researcher) both feel total stream fencing is justified and practical as a means of protecting aquatic/riparian habitats. Total fencing seems to be the only way to protect aquatic/riparian habitats; rest-rotation programs seem to be ineffective protection. No grazing would substantially improve both riparian and aquatic habitats.

Page 1-23, it is stated that fencing will be done on the following streams and bank miles: Davenport Creek, 0.5 mile; Jackson Creek, 1.4 miles; Crouse Creek, 0.4 mile; Sears Creek, 1.2 miles. Since these values represent bank mileage, they should be halved for actual stream mileage.

13.6 Page 2-86, the Invertebrates section relates too generally and vaguely to aquatic invertebrates. No data on community types, species associations or species occurrence are presented, although such data are commonly used as indicators in water quality assessments. Apparently, no effort was made to collect invertebrate data for this ES. Something more than three vague sentences are necessary to assess riparian-aquatic impacts.

Page 3-21, Fish, the left column discussion should be changed to state that fencing will improve riparian habitat along 0.7 stream miles (1.4 bank miles) of Jackson Creek. Furthermore, riparian zone improvement should be realized on all fenced portions of streams rather than just along Jackson and Willow creeks.

13.22 Page 3-21, the right-hand column of Fish, a population estimate is presented for Jackson Creek. Such data should be presented as available in the section "Description of the Environment."

13.23 Page 3-27, Fishing, it is stated that the proposal would not increase fisherman success, satisfaction or days. However, this is in direct disagreement with statements on page 2-112 (Land Use, Recreation Resources) that say, "Hunting, fishing and floatboating are expected to continue as the major recreational uses. Increased use pressures would result in less hunter and fisherman success, and a reduction in quality of the recreational experience." We believe that fisherman use will increase and that success will probably decrease. This comment should hold under the proposed action and all alternatives, including "no grazing."

13.24 Mitigating measures should include fencing of all public stream mileage throughout the management area. Fencing could be excluded on reaches that livestock are physically unable to get to, due to steep terrain. Fencing of present nonuse reaches should be done since livestock may shift to them as other areas are fenced. According to the document, about 51 percent of the present bank mileage is not grazed (or about 53.4 bank miles). This leaves 81.4 miles of bank accessible by livestock. Under the proposed action, only 3.5 bank miles (or 4 percent) will be fenced for stream protection. All streams tributary to the Green River in this area may have at least spawning importance as well as adult habitat, so fencing and consequent erosion control are imperative to protect Green River recruitment.

13.24

Alternatives, the BLM-selected alternative would be compatible with wildlife interests if the critical winter ranges for big game are maintained with browse as a major component. Protection of sage grouse habitat must be made a part of all vegetation manipulation projects. We encourage acceptance of our request for aquatic/riparian habitat protection.

We appreciate the opportunity to review and comment on this program.

Sincerely,

Homer D. Tapley
Douglas F. Day
Director
Acting Director

LETTER NUMBER 14

Department of Local Affairs
Colorado Division of Planning
Philip H. Schmuck, Director

1876
Richard D. Lamm, Governor

August 1, 1979

Mr. Lloyd H. Ferguson
District Manager
Vernal District Office
Bureau of Land Management
170 South 5th East
Vernal, Utah 84078

SUBJECT: Draft Environmental Impact Statement
Three Corners Grazing Management

Dear Mr. Ferguson:

The Colorado Clearinghouse has received the above-referenced proposal and has distributed it to interested state agencies. Comments received from the Division of Wildlife and the Division of Water Resources are enclosed for your information. It is hoped that the comments made by these agencies will be given serious attention.

Thank you for the opportunity to review this matter.

Sincerely,

SO Ellis/MK
Stephen O. Ellis
Chief Planner

SE/MK/vt
Enclosures

cc: Office of the Governor
Department of Natural Resources
Colorado West Area Council of Governments

520 State Centennial Building, 1313 Sherman Street, Denver, Colorado 80203 (303) 892-2351

RICHARD D. LAMM
Governor

1876

C.J. KUIPER
State Engineer

DIVISION OF WATER RESOURCES

Department of Natural Resources
1313 Sherman Street - Room 818
Denver, Colorado 80203
Administration (303) 839-3581
Ground Water (303) 839-3587

July 27, 1979

MEMORANDUM

TO: STEPHEN O. ELLIS, STATE CLEARINGHOUSE

FROM: DR. JERIS A. DANIELSON, DEPUTY STATE ENGINEER

SUBJECT: THREE CORNERS GRAZING MANAGEMENT

This is to acknowledge receipt of the draft environmental impact statement for the above referenced resource area. As requested, we have reviewed the statement and have the following comment with respect to the proposed water resource improvements that are a part of this plan.

14.4 The report is too brief and does not provide sufficient detail for us to determine the impact that the grazing management plan would have on vested water rights. In order to evaluate the effects of the new water pipelines, storage tanks, and development of springs, we need to know the location of the spring improvements, the source of the water for the pipelines, and the quantity of water involved. Since Pot Creek is presently over-appropriated, we need the information before we can make any comments regarding the impact of the proposals. In addition, the waters of Pot Creek are administered between Utah and Colorado in accordance with a written memorandum of understanding.

In conclusion, we feel that the statement does not adequately evaluate the effects of the proposed action upon the water users of Colorado.

Jeris A. Danielson

JAD/RLS:mvf

LETTER NUMBER 14

STATE OF COLORADO
Richard D. Lamm, Governor
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE
Jack R. Grieb, Director
6060 Broadway
Denver, Colorado 80216 (825-1192)

July 27, 1979

TO: Stephen O. Ellis, Principal Planner
Colorado Clearinghouse

FROM: Bert Baker, Wildlife Program Specialist
Division of Wildlife BDB

SUBJECT: Three Corners Grazing Management DES, BLM #79-123

We received the BLM Three Corners Grazing Management DES (State ID #79-123) and submit comments to you under the headings "GENERAL" and "SPECIFIC" in paragraphs as follows:

GENERAL

Geographic Names and Locations-If it is not too late at this stage, we would like to suggest that the geographic entity in Colorado called Diamond Mountain be put on DES map figures beginning with Figure 1-2 and thereafter throughout the DES. This mountain, which lies in T 9 N, R 103 W, 6 P. M., Colorado, is referred to in several places in the DES but is not, to our best knowledge, clearly identified. Diamond Peak, north of Cold Springs Mountain in Colorado, and Diamond Mountain Plateau, in Utah west of Dinosaur National Monument, could be mistakenly referred to if one was not aware of where Diamond Mountain is actually located. Basis for this information is the Public Land Recreation Map - Colorado Brown's Park Area that was jointly issued by USDI BLM and Colorado Department of Natural Resources, Division of Game, Fish and Parks in March 1971.

In addition, clarification would also be helpful at DES start if the three allotment segments in Colorado that are called Dry Creek, South Pot Creek, and Wild Mountain be prominently designated as a combined allotment. The same should be stated for the Hoy Flat and Hoy tracts, as indicated by Figure 1-2 datum that "arrows" these two together.

DEPARTMENT OF NATURAL RESOURCES, Harris Sherman, Executive Director • WILDLIFE COMMISSION, Michael Higbee, Chairman
Wilbur Redden, Vice Chairman • Sam Caudill, Secretary • Jean K. Tool, Member • Vernon C. Williams, Member
James Smith, Member • Donald Fernandez, Member • Richard Divelbiss, Member

Wildlife Impacts Under Alternative Of Full Forage Production (Alternative (1) In Chapter 8, Alternatives To The Proposed Action)- The DOW strongly opposes this alternative, inasmuch as 8,652 acres and 1,780 acres, respectively, would be treated for sagebrush and pinyon-juniper control on the four Colorado allotments. (Appendix, p. 74-75). As stated moreover, those actions would reduce the quality of deer, antelope, and sage grouse habitats and impact populations of those species (p. 8-24 and 8-25).

SPECIFIC

14.1 P. 1-13, Table 1-4, Objective 2. DOW experience in doing joint BLM-Division big game range studies, both intensively and extensively, indicates that DES vegetation ground cover values, particularly the Objective 2 25% ground cover goal, tend to be too high. Twenty-five percent might have some validity for a selected few grass or sagebrush types, although that figure is very unreasonable for pinyon-juniper overall.

Also pertinent to the above-mentioned subject are the DOW-maintained exclosures in Browns Park (2) and on Cold Springs Mountain (1) that were inventoried originally by line interception methodology. It is granted that data from those plots have not been updated lately, but the base-year information is still applicable as reliable indexes of many vegetation type plant coverages found south of the Green River in similar situations. Never did any of nine 3-way exclosure plots yield as much as 8% coverage of perennial vegetation, even at the exclosure on top of Cold Springs Mountain.

14.2 P. 1-28, Table 1-8. Item 3. under Sagebrush Control by Chaining and Item 5. under Sagebrush Control By Spraying- These paragraphs state that $\frac{1}{2}$ mile radii buffer zones are afforded sage grouse leks, as credited to the Western States Sage Grouse Committee. The Committee actually recommended 3 km radii at leks, the 3 km equalling 1.8 miles which is a figure that the DOW has been observing.

14.3 P. 1-35, Paragraph 5. Wyoming Game and Fish Department and Colorado Division of Wildlife- In view of the light deer hunter pressures of 96 hunters for 1977 and 251 hunters for 1978 in Colorado Game Management Unit #1 (Green River), we doubt that "Increases in big game numbers..... would ultimately be controlled by...... Colorado." Moreover, resulting deer harvests of 96 and 193 bucks, respectively those same years, should be interpreted to mean Colorado hunting is growing, yet still a negligible factor

LETTER NUMBER 14

Stephen O. Ellis
July 27, 1979
Page 3

14.3 in control of this interstate population. Inaccessibility to this isolated area by the Colorado hunting public very probably will always be a deterrent to good management of all wildlife.

Thank you for allowing us to review this Draft Environmental Statement.

BB:jb
cc: Perry Olson
Jim Coyner, USFWS

LETTER NUMBER 15

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
1860 LINCOLN STREET
DENVER, COLORADO 80295

AUG 1 1979

Ref: 8W-EE

Lloyd H. Ferguson
Bureau of Land Management
Vernal District Office
170 S. 5th East
Vernal, Utah 84078

Dear Mr. Ferguson:

The Region VIII office of the Environmental Protection Agency has completed its review of the draft environmental statement (DES) on the Three Corners Grazing Management and offers the following comments for your consideration.

15.1 1. Page 13 of the DES states, "The purpose of the proposal is to manage livestock grazing use on public land in a manner that would maintain or improve the range conditions and other related resources..." However, page 3-17 states, "Poor condition range would remain at 8,415 acres." It seems that emphasis should be placed on improving all range in the poor category. Only range in good condition should be considered as being maintained rather than improved.

2. The resource analysis sections on air and water quality impacts are adequate. The use of a narrative and tabular format to display general and in-depth discussion of impacts is helpful.

According to the procedures EPA has adopted to rate the adequacy of DES's, the DES for the Three Corners Grazing Management will be listed in the Federal Register as LO-1. This means that except for the aforementioned concern we do not object to the proposed action as described in the DES. If you have any questions, please contact Dennis Sohocki at (FTS) 327-4831.

Sincerely yours,

Alan Merson
Regional Administrator

LETTER NUMBER 16

United States Department of the Interior
FISH AND WILDLIFE SERVICE
AREA OFFICE COLORADO—UTAH
1311 FEDERAL BUILDING
125 SOUTH STATE STREET
SALT LAKE CITY, UTAH 84138

IN REPLY REFER TO: (ES)

August 3, 1979

MEMORANDUM

TO: Lloyd H. Ferguson, District Manager
Bureau of Land Management
170 South 5th East
Vernal, Utah 84078

FROM: Area Manager
U.S. Fish and Wildlife Service
1311 Federal Building
125 S. State Street
Salt Lake City, Utah 84138

SUBJECT: Review comments on the Three Corners Grazing Management Environmental Statement

We have reviewed the Three Corners Grazing Management draft environmental statement and find your agency has done a creditable job recognizing the needs of wildlife in a public lands grazing program. Our comments are limited to three general areas where new or possibly unknown information may help you in the planning process.

Sage Grouse

Sage grouse are unique birds that are totally dependent upon a single plant species, big sagebrush (Artemisia tridentata), for their livelihood. Leaves of sagebrush makes up their entire diet from October through May. Breeding grounds are openings in wintering sagebrush habitat. Nests are usually located under sagebrush plants within two miles of the breeding grounds. Sagebrush stands are used for loafing, shelter and/or cover during some part of the day throughout the year. Sagebrush is absolutely essential to their survival.

There are many millions of acres of sagebrush in the intermountain west but only a small part of it is habitat suitable for sage grouse. Unfortunately, many sagebrush stands that can be easily and effectively eradicated may be supporting wintering sage grouse. Before any sagebrush eradication is attempted on public lands, a thorough examination should be made for evidence of winter grouse use. Winter areas can be determined at any time of the year by surveying for winter droppings. These droppings are resistant to weathering and are easily identified. We recommend no sagebrush treatments where sage grouse would be affected.

16.1 Sagebrush spraying and/or chaining is proposed for Ruple Cabin, Hoy Mountain and Davis Draw pasture (table 1-3). According to Figure 2-13, Ruple Cabin is shown to have considerable winter sage grouse range in it, Hoy Mountain lies immediately adjacent to winter range and Davis Draw is some distance from sage grouse winter range. Before any treatment is begun in these areas, adequate on-the-ground surveys should be made for evidence of winter sage grouse use.

16.2 Your map, Important Sage Grouse Areas (Figure 2-13), is quite likely lacking completeness. Strutting grounds and late winter use areas are inseparable. Strutting grounds isolated from winter range, like shown on the Willow Creek and Sears Canyon allotments, are highly unlikely and conversely, winter areas without strutting grounds are equally unlikely. Diligent searching and a little luck will give you the extent of the winter, breeding and nesting habitat.

16.3 The Fish and Wildlife Service recommends the Bureau of Land Management thoroughly study all proposed sagebrush control areas for sage grouse use and follow the guidelines for sage grouse habitat management outlined by Braun, Britt and Wallestad (1977) and/or Call (1979) on all occupied sage grouse habitat. This would mean no sagebrush control within 3 KM (1.86 miles) of sage grouse strutting grounds, rather than the 1/2 mile stated in Table 1-8 on page 1-28 in the draft environmental statement.

Big Game Winter Range

Antelope Flats, Goslin Mountain, Clay Basin, Willow Creek, Sears Canyon, Jackson Draw and Little Hole allotments have essential deer, elk and antelope winter ranges. We suggest the wildlife winter range parts of these allotments be grazed to promote browse production rather than grass. This could be done by grazing livestock from early spring through about June 30. This has proven effective in promoting browse production.

Riparian-Aquatic Habitats

16.4 Riparian and aquatic habitats are so closely related that any management plan that affects one should similarly affect the other. These habitats are important to all sorts of terrestrial and aquatic life, water quality and watersheds. The draft statement did not make it possible to compare conditions of riparian habitat (Table 2-7) with aquatic habitats (Table 2-19) or discuss their importance with each other. We suggest a change in the statement be made so they can be compared.

Fish habitat is shown to have about 22.6 stream miles rated poor to fair and 10.9 miles rated good to excellent (Table 2-19). Your statement, "...better livestock distribution through placement of fences and water development to reduce grazing pressure on streams and riparian areas..." (Table 1-3, MFP 2, Range Recommendations) is vague. Its also suggested

LETTER NUMBER 16

Page 3

elsewhere rest-rotation grazing may improve riparian/aquatic habitat. Rest-rotation grazing has not been found to improve riparian and/or aquatic habitats; however, it has been adequately demonstrated that only complete exclusion of livestock will allow these habitat types to improve Duff (1978), Kimball and Savage (1977). We recommend all livestock grazing of public riparian/aquatic habitats be eliminated by fencing or other methods to improve riparian/aquatic habitats, wildlife and fish habitat and fishing.

We thank you for this opportunity to comment on your draft environmental statement.

Robt H Shields

LITERATURE CITED

Braun, Cloit, Tim Britt and Dick Wallestad. 1977. Guidelines for Maintenance of Sage Grouse Habitat. Wildlife Society Bulletin 5(3): 99-106

Call, Mayo W. 1979. Habitat Requirements and management recommendations for Sage Grouse, Technical Note, U.S. Dept. Interior - BLM 37 p.

Duff, Donald A. 1978 "Riparian Habitat recovery on Big Creek, Rich County, Utah: A Summary of 8 Years of Study" (Manuscript now in press). Presented to Grazing and Riparian/Stream Ecosystem Forum, Denver, Colorado. Nov 3,4,

Kimball, James and Savage, Frank 1977. Diamond Fork Aquatic and Range Habitat Improvement, U.S. Dept. of Agriculture, Forest Service, Intermountain Region, Ogden, Utah.

LETTER NUMBER 17

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
324 25th Street
Ogden, UT 84401

1920
AUG 1 1979

Mr. Lloyd H. Ferguson
District Manager
Vernal District Office
Bureau of Land Management
170 South 5th East
Vernal, Utah 84078

Dear Mr. Ferguson:

Following are the Forest Service - Intermountain Region's comments on the draft environmental statement for the Three Corners Grazing Management area. Comments were received from our Wildlife and Range Management Staff groups in the Regional Office and from the Ashley National Forest. All comments are included in this consolidated reply.

Page No.

17.1 1-13 To improve or maintain big game habitat and watershed conditions on 190,536 acres by maintaining at least 25 percent vegetation cover is a low requirement and will not provide watershed protection. Much of Diamond Mountain will have over 50 to 70 percent vegetation cover.

17.2 1-13 Item 8 - Total AUM's do not add up to present and increased elk populations.

17.3 1-14 Is the 15,901 AUM the proper use capacity? The allocation increase in five years from 28,721 to 34,333 appears large, about 5,600 AUM's, as compared to the improvement program, 1620 Sagebrush Control, 52 water developments, and improved management. The figures show this increase. Many of the rest-rotation systems have prevented adjustment, but large increases are not evident. We noticed four allotments for rest or deferred, 17 improved management, and 17 to continue allotment wide management. Some of the existing improvements, such as the 4000 acres of P-J chaining, will provide for additional capacity, but assumed these increases are included in the capacities since the project was rehabilitated in 1964.

17.4 The ES does not adequately explain how the increase in Wildlife AUM's is going to occur. On page 7-1 it also mentions that irreversible loss of habitat from the vegetation conversion from browse to grass would occur.

17.5 Listed improvements do not appear adequate to provide for the increase in wildlife AUM's. Are wildlife improvements addressed in a separate plan, or have they already been accomplished? Are populations of elk and deer assumed to be below winter range carrying capacity?

17.6 If the increased allocation of AUM's does result in increased big game population, what will be the impact on lands adjacent to the planning area; e.g., National Forest?

1-26 17.7 Other options may be present in addition to sagebrush spraying. There is no objection to spraying but good success has resulted from controlled burning.

1-28 17.8 We disagree with the statement on this page that project design limitations for sagebrush chaining and spraying projects conform with guidelines developed by the Western States Sage Grouse Committee. Those guidelines (1974) stated that vegetal control within the breeding complex will not be undertaken within two miles of strutting grounds. We believe the April 1, 1979, joint memorandum from the Utah Division of Wildlife Resources, State Director, BLM; Regional Forester, FS; and State Conservationist, SCS is more appropriate than the guidelines. In implementing the guidelines, the above memorandum states in part:

> "The ... guidelines are recommendations designed to minimize damage to populations of sage grouse. Each individual situation should be carefully investigated and professional analysis and judgment utilized in arriving at final decisions. None of the guidelines are inflexible. In nature, each individual situation is different ... Deviations from the guidelines can occur, but must be soundly based and carefully planned. The guidelines are not meant to replace biological judgment based on individual circumstances ... A well-planned range manipulation project has the potential of improving sage grouse habitat, increasing forage production and improving soil and water conservation."

The 1/2-mile limitation listed in the proposal is a cookbook approach without professionalism as indicated above. Many opportunities could be forgone if the 1/2-mile limitation is

imposed. Similarly, the 1/2-mile buffer beside riparian or line water is unwarranted. In some instances, riparian habitat may be extended by specific treatment. Certainly some modest buffer adjacent to live water is needed for spraying or chaining projects, but the cookbook approach is not an acceptable multiple use land management technique.

1-33 The proposal foregoes opportunity for increased forage production by limiting sagebrush treatment to only 1,660 acres. Based on historical trends throughout the west, both sagebrush and pinyon-juniper increased in density while pinyon-juniper expanded in acreage occupied. There are many examples where forage production for both wildlife and livestock has been increased in sagebrush and/or pinyon-juniper from about 30 acres per AUM to a range of two to six acres per AUM. Of the 84.8 percent (about 161,600 acres) of the planning unit in the sagebrush and pinyon-juniper types, 1,660 acres proposed for sagebrush treatment is only a token effort towards increasing forage production.

1-34 17.9 We do not have a Dutch John Draw allotment; it is the Goslin Mountain Allotment. The plan coordinates an allotment with the Flaming Gorge Ranger District. If big game population increases, then there is a need for coordination with the Vernal District due to big game migration and summer-range use.

2-49 17.10 Through the range survey, some knowledge is available on vegetation production. Range surveys provide a one-year estimate of production and are necessary to initiate a grazing allotment plan. What are the impacts from livestock and wildlife use in order to firm up the carrying capacity? Utilization of 60% cannot be assumed on all types of range but will depend on the range condition, slope, and soil. It appears that AUM allocations were made mainly from an occular range survey without actual grazing impact studies. Are 17.11 followup studies included? Was unsuitable livestock range used in the wildlife allocation?

2-57 17.12 Table 2-3 states the antelope population is static. DWR's trend count indicates an increase in this herd and has counted 443 pronghorn antelope in herd unit 6.

2-59 Goslin Mountain herd is estimated at 80-100 animals.

17.13 A statement is made that "deer populations are well below habitat carrying capacity, with a slight upward trend (UDWR, 1972)." We suggest that current population estimates in relation to habitat carrying capacity may have drastically changed

17.13 from 1972 since a "buck only" harvest was instituted at that time. "Buck only" harvests continued through 1978. The primary objective of "buck only" harvests is, of course, to build populations. An evaluation of the current situation is needed.

2-59 17.14 Increased recognition of wildlife habitat needs is appropriate. However, we question if the forage allocation for deer, as proposed, is realistic. For example, winter range is identified as the limiting factor for deer. Crucial winter ranges are depicted on maps. It is unclear if winter range improvements are planned. Unless carrying capacity of the crucial winter range is significantly increased, large increases in forage allocation for wildlife throughout the management area are highly questionable.

As stated in a recent Utah Division of Wildlife Resources publication, 1/ "It is a well known fact that the health and vigor of big game populations are closely tied to the condition and the amount of the most critical portion of their habitat. In Utah, this is most often winter range, but it can on occasion, be summer range that is limiting. The problem is to correctly identify, quantify, and describe these areas for each of the deer herd units in the State."

2-65 2-66 17.15 There are problems with the numbers in Table 2-15. For example, on the Taylor Flat Watson Allotment, estimated AUM production for deer winter use is 953, estimated AUM's used is 933, AUM's available for expansion is listed as 51. The difference between production and use is 20 AUM's. This would seem to be the proper amount available for expansion. Similar problems are noted for Rye Grass, Red Creek, Dry Creek-South Pot Creek-Wild Mountain, and Ruple Cabin allotments.

Forage acre factors and mathematical calculations of grazing capacity do not hold up for most rangelands. Any mathematical calculations of carrying capacity is, at best, only a rough estimate. Only by monitoring the on-the-ground management and determination of trend over a period of several years can one satisfactorily arrive at grazing capacity. However, the past history of use and current range conditions can also furnish important information.

17.16 The proposal is for continuous season-long grazing on some allotments with 60 percent allowable use on key forage species. Other than a few special instances such as grazing on wet meadows, crested wheatgrass seedings, or grazing during plant dormancy periods, we are unaware of data supporting this degree of utilization. Fifty percent use of key species during the growth period on ranges in fair condition allows little, if any, margin for improvement of range condition. Where sites are dominated by sagebrush and/or pinyon-juniper, little improvement can be expected through grazing management practices alone. Extensive experience plus many literature sources give reason to question statements that range trends will remain stable or become upward when ranges are grazed at utilization rates indicated. The more palatable herbaceous species under grazing, at the indicated rates, are unable to successfully compete with deep-rooted, less palatable woody plants. Vegetation manipulation is most often required to create conditions where more desirable forage species can become established.

17.17

2-68 17.18 The pronghorn population estimate should be at least 443 and increasing, based upon UDWR counts. Can adjacent lands, private, State, and other Federal, support the big game increases as listed in the future allocations? Only a portion of these herd numbers will migrate to the National Forest. As mentioned (2-59), the winter range is considered the limiting factor and will these areas support the nearly 6,000 AUM projected increase? We find little big game habital improvement as new projects, realizing all water developments, spraying, and rested units will provide some big game benefits.

2-111 17.19 As stated on this page, big sagebrush will continue to increase on cattle allotments for the next 15 to 20 years. Rather than remain in stable or improve in range condition, the areas grazed by cattle would become increasingly dominated by big sagebrush. Big sagebrush already make up more than 30 percent of the vegetative composition (the plan objectives state that desirable levels of big sagebrush are 20 to 30 percent of the composition) on 19 of the 39 allotments, while on another 3 allotments, big sagebrush make up 30 percent of the composition. Where big sagebrush now either equal or exceed desirable levels of the vegetation composition, and under the proposal it is predicted that big sagebrush will increase on cattle allotments, it is impossible to meet stated objectives and maintain or improve usable forage production.

3-4 17.20 This page discusses the probable impacts on water quality as a result of constructing 3.5 miles of fence to protect riparian areas. Under properly developed management schemes, we question the fencing needs. We also question if the increase in orthophosphate, due to an increase in decaying vegetation under rangeland situations, would be detectable, especially if the expected change takes place gradually over a 15- to 20-year period. The existing variability would far overshadow expected increases.

1/ Utah Big Game Range Inventory - 1977, Publication Number 79-3, Annual Performance Report for Federal Aid Project W-65-R-D-26, Utah Division of Wildlife Resources.

LETTER NUMBER 17

3-19 The proposed allocation of increased forage production is imbalanced. The proposal includes an increase of 2,458 AUM's for elk, 2,236 AUM's for deer, and 1,860 AUM's for livestock. Without an extensive crucial winter range improvement program, we agree with the analysis on the page that the area is incapable of supporting deer and elk populations to the levels indicated. As a result, the increased AUM's allocated to wildlife would be unnecessary.

8-71 The alternative for 50 percent reduction in livestock use is unclear. This alternative talks of 40, 45, and 50 percent reductions in livestock use.

General Comments

Many of the terms used vary from those commonly used within the Range Management profession. Definitions differ from those published and accepted by the Society for Range Management (see A Glossary of Terms Used in Range Management, 2nd Edition, SRM). Use of standardized terms and definitions would aid in clarification and understanding of the document. Examples are:

	Definition in DES	SRM Definition
1. Animal Unit	One cow with calf less than 6 months old or an equivalent identified as 5 sheep, 9.6 antelope, 5.8 mule deer, 1.88 elk.	Considered to be one mature (1000 lbs.) cow or the equivalent based upon average daily forage consumption of 26 lbs. dry matter per day.
2. Animal Unit Month	Amount of forage required to sustain the equivalent animal-unit for one month.	The amount of forage required by an animal-unit for one month.

Forage requirements vary according to size and kind of animals being grazed. From the definitions in the DES, there is no way of determining the amount of forage required. Furthermore, referring to AUM's for wildlife, even though conversion factors are given, confuses understanding of the allocation procedure.

3. Livestock Forage Condition	The present state of health of range based on the amount and quality of forage it is capable of producing for grazing animals.	The current productivity of a range relative to what that range is naturally capable of producing.

As used, livestock forage condition is essentially the same term as accepted for range condition. The terms forage condition and forage trend are used interchangeably in the document with range condition and range trend. For clarification, we recommend that the more widely used and recognized range terms be used.

4. Forage Condition Trend	Describes the changes occurring in forage condition. It is expressed as improving, static, or declining.	The change in range condition.

5. Allotment-wide grazing is the same as "continuous grazing" throughout the entire grazing season as defined by SRM. Allotment-wide grazing can also be achieved under a deferred rotation system as all parts of an allotment are grazed during a particular year.

While an initial forage allocation can be made from a single year's inventory, several years' productivity measurements are required to firm up carrying capacity determinations. Depending on climatic factors, forage production can vary from 100 to 200 percent or more from one year to another. A longer period of vegetation measurement is needed to allow for production variability before final forage allocations are made.

CEQ's regulations, which took effect on July 30, 1979, will aid both our agencies in providing uniform terminology and a uniform outline for preparing environmental statements under the National Environmental Policy Act.

We appreciate the good working relationship we have with the BLM and look forward to continuing our cooperative grazing program with additional effort and emphasis on coordinating wildlife habitat and range management programs.

Sincerely,

RICHARD K. GRISWOLD
Director, Regional Planning
and Budget

ADDENDUM

TEXT CHANGES IN THE DRAFT

SUMMARY

( ) Draft (X) Final Environmental Statement

Department of the Interior, Bureau of Land Management

1. Type of Action (X) Administrative ( ) Legislative

2. Brief Description of Action: The Three Corners Planning Unit is in the northeast corner of Utah, approximately 20 miles north of Vernal, Utah and approximately 45 miles south of Rock Springs, Wyoming. It encompasses 190,536 acres of public land, 85 percent of which is in Utah and 15 percent in Colorado (see attached figure).

The proposed action is to initially allocate the following animal unit months (AUMs) of forage: 15,788 for cattle; 3,655 for sheep; 9,684 for deer; 4,838 for elk; and 378 for antelope. In 15 to 20 years the proposed allocation of AUMs would be: 16,174 for cattle; 3,259 for sheep; 10,299 for deer; 6,091 for elk; and 380 for antelope. The proposed action includes: 1) reserve one allotment for big game use; 2) continue present allotment-wide grazing on 17 allotments; 3) continue present improved management on four allotments with existing AMPs; and 4) implement improved management on 17 allotments. (These actions would involve combining 50 existing allotments into 39 allotments).

Developments proposed include: fencing 3.5 miles of stream banks, 26.5 miles of division and allotment boundary fences, 52 water developments, and 1,620 acres of sage brush control.

3. Summary of Environmental Impacts: In general, existing fair and good forage condition for livestock on 182,121 acres would be maintained or improved. Poor forage condition for livestock would remain on 8,145 acres. Vegetation composition changes would occur, with increases in desirable plants on 22 allotments. Existing forage (AUMs) for livestock and big game would be used and future increases in forage production and use (by 7,572 AUMs) would occur along with related economic gain. Wildlife habitat would decline in quality on 10 allotments. Minor impacts would occur to these resources: soils, water, threatened and endangered plants (inadvertant loss), cultural and paleontological features (inadvertant damage), and recreation values.

4. Alternatives Considered Are: 1) Livestock grazing at full forage production; 2) continuation of present range management and level of allocation (no action); 3) livestock grazing at 50% of the initial proposed stocking level; and 4) elimination of all livestock grazing.

5. Comments Have Been Requested From the Following: (See Attachment).

6. Date Draft Statement Made Available to EPA and the Public:
June 15, 1979.

Figure 1-2 on Page 1-5 contains two errors that do not change the impact analysis. The map depicted two areas as private land which the Utah division of Wildlife Resources has purchased.

TABLE 1-4

Three Corners Planning Unit Objectives for Grazing Management

	Objective	Public Land Acreage Involved[a]
1.	Improve riparian vegetation from fair to good condition on two allotments (15.2 miles of stream bank) and maintain good riparian vegetation condition on 12 allotments (89.6 miles of stream bank).	135,551
2.	Improve or maintain big game habitat and watershed conditions on 39 allotments by maintaining at least 25 percent vegetation ground cover on all vegetation types. The percent composition of desireable plants within these types should be maintained at approximately 60 percent, with big sagebrush making up 20 to 30 percent. Desirable plants are: sagebrush, mountain mahogany, bitterbrush, serviceberry, snowberry, wheatgrass, needlegrass, Indian ricegrass, elk sedge, bluegrass, junegrass, arrowleaf balsamroot, phlox, lupine, and daisy.	190,536
3.	Reduce dense stands of sagebrush from 80 percent to make forage available in one allotment and allow proper implementation of existing AMPs on two allotments within 5 years.	1,660
4.	Maintain existing livestock forage condition (good on 12,858 acres; fair on 6,789 acres; and poor on 786 acres) on 16 allotments.	20,433
5.	Improve livestock forage condition from fair to good on 25,022 acres (50 percent of the current fair condition acreage), on 20 allotments exclusive of those acreage currently in Douglas fir and pinyon-juniper types.	25,022
6.	Maintain present levels of livestock forage allocation (1,545 AUMs) on 16 allotments.	20,273
7.	Increase livestock forage allocation from 14,356 AUMs to 16,216 AUMs (1,860 AUMs) on 20 allotments.	146,648
8.	Provide 4,838 AUMs of forage for present elk populations and 1,253 AUMs forage for increased populations of elk. A total of 6,091 AUMs would be available for elk on 38 allotments.	182,078
9.	Provide 355 AUMs of forage for existing antelope herds and 29 AUMs for increased antelope populations in 20 years. A total of 380 AUMs would be available for antelope on five allotments.	71,345
10.	Provide 8,070 AUMs of forage for existing deer populations and 2,229 AUMs for increased deer populations in 20 years. A total of 10,299 AUMs would be available for deer on 39 allotments.	190,536

Source: Three Corners Planning Documents.

[a] Acres are not additive, since objectives overlap various portions of the planning unit.

Allotment-Wide Grazing

Present allotment-wide grazing management would continue on 32,570 acres of public land on 17 allotments (see Appendix I-3). These allotments are divided into four subcomponents based in season of use as follows:

Spring (April and May only) - 2 allotments

Spring and Fall (May and June and September through October - 6 allotments

Spring-Summer-Fall (begin in May or June and continue into October or November) - 7 allotments

Spring-Summer (begin in June through September 15) - 2 allotments

On these allotments, livestock would be allowed to graze an entire allotment during the designated grazing season each year. Except for the Bridgeport and the Taylor Flat-Watson allotments, BLM's management opportunities are limited because private lands within allotments contribute 63 to 98 percent of the total forage produced. Continuation of existing management on the Bridgeport and the Taylor Flat-Watson allotments is intended to meet the objectives of enhancing big game habitat and forage. Use on the other 15 allotments, during the critical spring, summer, and fall growth periods, is designed to capitalize on the high palatability of key forage species during these seasons. Limiting use on key species to 60 percent should perpetuate the allotment's existing forage condition and trend. As the allotment management plans are developed and stocking rates are firmed up, the utilization factor would also be studied and adjusted as necessary. Bridgeport contains the only range in poor forage condition (as shown on Table 1-3). All other public lands are in fair or good condition. This type of management in the past has left the range in satisfactory condition and the proposal would continue such management.

Existing Improved Grazing Management

Existing improved management would continue on 39,538 acres of public land where forage condition trend is static or improving. This includes the four allotments now under AMPs (see Appendix I-3). The existing management has resulted in range condition that is satisfactory and the proposal would continue this type of management. Two allotments are managed under rest-rotation grazing systems. One allotment is under a deferred-rotation grazing system. One allotment uses a rest rotation system on five of its pastures and deferred rotation grazing system on three pastures. Pastures are generally equally divided by forage production. Grazing treatments are rotated so that at the end of each cycle each pasture would have received equal treatment, that is, all pastures would be grazed and rested the same amount of time. Forage conditions are now improving in response to the treatments. Red Creek Allotment would be grazed by livestock in April and May to meet the objectives of enhancing big game habitat and forage.

Implementation of Improved Management

This component of the proposed action would involve 17 allotments and 115,568 acres of public land in the planning unit (see Appendix I-3). A total of 14 allotments would receive spring, summer, and fall grazing. Grazing during the spring would be periodically deferred. Three allotments would receive spring and fall grazing with periodic spring deferrment and grazing

(concluded)

treatments. These allotments have heavy livestock use areas around existing waters and some riparian areas because of poor livestock distribution. This poor distribution is a function of water availability, topography, and land status patterns. The proposal would implement improved management to allow the heavy use areas to improve in condition by providing for better livestock distribution. The rational for the type of management to be applied to this sub-component is found in Table 1-3.

Monitoring and Study Programs

All components of the proposed action would be monitored to determine if management objectives (Tables 1-4 and 1-5) were being met. The program would include an evaluation, at the conclusion of grazing treatments for utilization of key species and forage species, and at the end of each grazing cycle (3 to 4 years for any changes in plant composition, ground cover, and forage condition. Four primary studies would be basic to the evaluation: actual grazing use, vegetation utilization, range trend, and climate analyses (BLM Manual Section 4413.3). In addition, wildlife habitat, riparian vegetation, aquatic habitat utilization and trends, and watershed condition would be evaluated if these resource values occur on an allotment.

Data from these studies would be evaluated to determine management effectiveness and to assist in making adjustments. The proposed action would be modified if evaluation determined that specific allotment objectives were not being achieved. Modifications could include changes in the grazing system, livestock numbers, seasons of use, additional range developments, or a combination of adjustments which would attain management objectives. Significant modifications would require preparation of an environmental assessment record or a supplement to this environmental statement.

Standard Design, Construction, and Operation Features

The following protective measures would be required as standard design, construction, or operation procedures. These measures would be required to protect resource values and limit adverse impacts associated with the proposed grazing management program.

1. No permanent trails or roads would be constructed to project sites. Existing access would be used. Disturbance at all projects would be held to a minimum.

2. No clearing of the project sites would be allowed except on sites requiring excavation.

3. Sprayed or chained plants would be left in place. Disturbed areas where insuffient vegetation occurs would be seeded in order to provide ground cover and minimize losses of soil. Seeding would generally be done during the fall.

4. A survey of potential habitat for threatened or endangered species (including any species under consideration for formal designation as threatened or endangered) would be made prior to taking any action that could affect these species. Should BLM determine there may be an effect on listed species, formal consultation with the U.S. Fish and Wildlife Service would be initiated.

5. Intensive archaeological surveys and clearance would be required for all project sites (as specified in BLM Manual 8111.14) prior to new construction. Properties eligible for inclusion in the National Register of Historic Places would be identified

11. The appropriate federal official would be notified if vertebrate paleontological remains are encountered during construction. Recovery, protection, and preservation measures would then be implemented as necessary to mitigate adverse impacts.

12. Prior to the development of projects, provisions of the Memorandum of Understanding of April 1, 1979 between the BLM, USFS, UDWR, and SCS and the master Memorandum of Understanding between BLM and UDWR, June 1979 would be met. These memoranda provide for coordination in the development and establishment of guidelines for buffer zones for water, sage grouse strutting grounds, and other developments. The project would be soundly based and carefully planned.

Additional design restrictions specifically applicable to proposed range developments are summarized in Table 1-8.

Development and Maintenance Costs

The Vernal District grazing management program would incur increased costs from implementation and management of the proposal. The range user would also have increased costs associated with maintenance of proposed range developments, such as fences and water developments other than pipelines and springs. The additional costs would primarily be encountered in the following areas:

1. Administrative costs of AMP development and management.
2. Design and construction of proposed range developments, including vegetative treatments.
3. Maintenance of range developments.
4. Livestock use supervision, monitoring, and evaluation of the proposal once implemented.

Construction of proposed range developments and completion of sagebrush control operations would cost an estimated $196,600 as shown on Table 1-9. Annual maintenance of existing (existing developments are listed in Appendix I-6) and proposed range developments would cost an estimated $20,000 for BLM and $30,000 for the livestock operators as shown on Table 1-10. Cost figures for supervision, administrative, and monitoring would be dependent on funding levels, rate of implementation, and district priorities.

Implementation

BLM would implement the grazing management program through AMPs. BLM personnel and affected livestock operators would develop each AMP in order to ensure agreement. After finalization (including agreement by affected livestock operators), each AMP would be implemented by decision of the District Manager. If BLM personnel and affected livestock operators failed to reach agreement, an AMP that provided for the protection of the resource would be implemented by decision of the District Manager. The livestock operator would, however, have the right to appeal any such decisions. Included in the decision would be identification of both the BLM and range user's responsibilities for development and maintenance of range facilities and accomplishment of sagebrush control. Also included in the decision would be the identification of BLM's and range user's responsibilities for monitoring of the AMP.

Details of the proposed action would be further refined and specifically matched to resource conditions during preparation of AMPs and proposed developments could vary from those described at this stage of planning.

TABLE 1-8

Summary of Project Design Restrictions

Sagebrush Control By Chaining	Sagebrush Control By Spraying	Water Developments[a]	Fences
1. Examination of physical site factors, such as slope, exposure, soil depth, and erosion susceptibility would be criteria used in selecting sites.	1. Examination of physical site factors, such as slope, exposure, soil depth, seeding suitability, and erosion susceptibility would be criteria used in selecting sites. Manual 92.20 guildelines would be followed.	1. Actual work in spring and stream beds done by hand where possible. If machinery were needed in these areas, rubber-tired tractors would be utilized to reduce damage.	1. Off-road vehicular traffic during construction would be held to a minimum.
2. Configuration and patterns would be in conformance with visual resource management guidelines.	2. Prescribed spraying plan required that would identify application procedures, environmental conditions where allowed, controls, and coordination responsibilities. This plan would be submitted to the Washington Office prior to implementation.	2. After construction of spring head boxes, troughs, pipelines, and well sites, the areas would be cleaned up and refuse removed.	2. Fence posts would be colored to blend in with surroundings except where visibility is required for safety.
3. Areas within 200 feet of roads would not be chained or railed.	3. Projects would not exceed State and EPA pollution standards. Application of chemicals would conform to EPA regulations and BLM requirements.	3. Cuts, fills, excavations would be dressed and blended with surroundings. Pipelines would be buried where possible.	3. Where fences would cross existing roads, either gates or cattleguards would be installed.
4. Steep drainages (over 30 percent slope) would not be chained or railed.	4. Configuration and patterns would be in conformance with visual resource management guidelines.	4. Original water sources would be protected, fenced if required, and an off-stream source provided near the site.	4. Gates would be installed along fence lines at regular intervals.
5. The need for and proper dimensions of buffer zones would be jointly agreed to on the ground prior to development of projects. Buffer zones would be provided where determined to be necessary to allow normal riparian ecosystem functioning and protection of sage grouse areas.	5. Chemical spray would only be applied when winds are less than 5 miles per hour to control drift.	5. Size of storage tanks and troughs would be designed to accommodate expected needs of animals using each source.	5. Vegetation clearance would be held to a minimum.
	6. The need for and proper dimensions of buffer zones would be jointly agreed to on the ground prior to development of projects. Buffer zones would be provided where determined to be necessary to allow normal riparian ecosystem functioning and protection of sage grouse areas.	6. Overflow would be discharged from tank sites, wells cased to prevent cave-in and well sites would be fenced.	6. In big game areas, fences would be designed to accommodate movement of big game per BLM 1737 fencing manual.
		7. Storage structures would be designed to provide water to wildlife (animals and birds). Drinking ramps would be installed and heights would not prohibit young animals from obtaining water.	7. Four strand barbed wire fence would be constructed on cattle allotments outside antelope areas.
		8. Water development would be located and designed within visual resource management guidelines.	8. Three strand wire fences with the top two being barbed wire and the bottom wire being smooth wire (16 inches above the ground) would be used on cattle allotments within antelope areas.

INTERRELATIONSHIPS WITH OTHER FEDERAL, STATE, AND PRIVATE GRAZING PROGRAMS, PLANS, AND POLICIES

Federal and state agencies having programs which interrelate with the proposed action are the U.S. Forest Service, National Park Service, Utah State Lands Division, Utah Division of Wildlife Resources, Wyoming Game and Fish Department, and Colorado Division of Wildlife. Private land owners are also involved.

Federal

U.S. Forest Service

All sheep operations that use BLM administered land during spring and fall also use Ashley National Forest lands during the summer. Four operators and about 16,000 sheep are involved. High mountain Forest Service ranges can only be used during a limited summer grazing season and use of BLM land during spring and fall is an integral part of the operator's year-long operation. Adjustments in season of use and livestock numbers proposed by either agency are interrelated with the seasonal interdependence and year-round ranching operations.

One operator grazes 500 cattle on the Goslin Mountain and Antelope Flat BLM allotments in common with the adjacent Goslin Mountain and Antelope Flat Forest Service allotments. The boundary between Forest Service and BLM administered public land is not fenced. Since these BLM allotments are proposed for improved management, coordination with the Forest Service's Flaming Gorge Ranger District management program would be required. The ranger district would be involved in preparing and concurring with the proposed management plans for these allotments.

National Park Service

The Wild Mountain grazing allotment includes public lands administered by both BLM and Dinosaur National Monument. The National Park Service has issued grazing permits for three operators within the allotment. Two of these permits expire in 1985 and will not be renewed. This environmental statement deals only with forage obtained on public land administered by BLM.

This could reduce the number of livestock on Wild Mountain Allotment. The BLM/Dinosaur National Monument boundary would probably then be fenced to exclude livestock from the monument.

The livestock operator would have to compensate for the loss of AUMs by reducing herd size, buying feed, or grazing private land.

State

Utah State Lands Division

The State of Utah owns 18,749 acres intermixed with federal and private lands within the planning unit. Most of this land is leased by livestock operators. Proposed changes in grazing management involve 18 BLM allotments containing state land. Exchange of use agreements between the permittees and BLM for all 18 allotments stipulate that unfenced state land will be managed in the same manner as adjacent BLM administered land. Proposed management and developments on public lands may require developments on state lands which

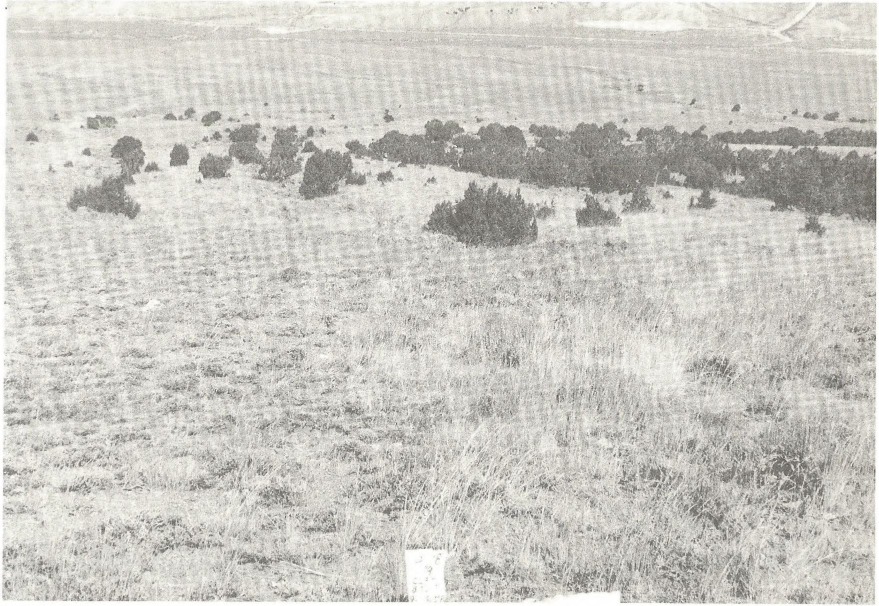
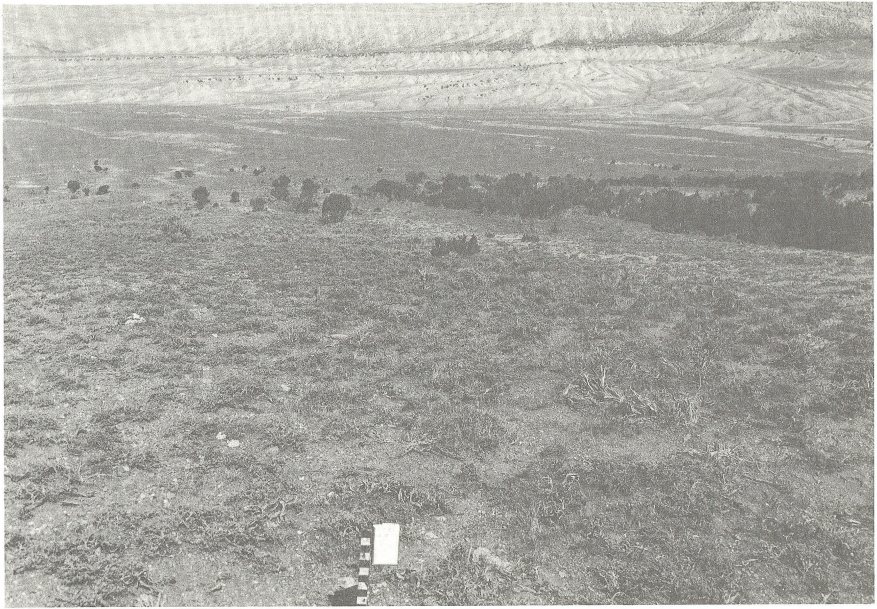


FIGURE 2-4 (5 OF 8)

RED CREEK WATERSHED
(Clay Basin No. 9)
IN 1955



RED CREEK WATERSHED
(Clay Basin No. 9)
IN 1978

FIGURE 2-4 (6 OF 8)

The total annual water supply on public lands in the planning unit is approximately 130,460 acre-feet, exclusive of the Green River. Consumptive water uses by livestock and big game amount to 23 acre-feet or about 0.02 percent of the amount available annually. Appendix II-3 shows how consumptive water use and total annual water supply was calculated.

About 36 percent (104.8 miles) of the unit's stream and reservoir shorelines are on public lands. The Green River flows through the unit for 26.7 miles and has a shoreline of 41.1 miles; about 67 percent (27.7 miles) is on public lands. Two privately owned reservoirs have a total shoreline of 4.9 miles, but only 18 percent (0.9 miles) of their shoreline is on public lands. Livestock are excluded from 51.7 miles about 51 percent of public land streambanks and shoreline by fences, by canyon terrain, or because the areas are not grazed by livestock.

Red Creek carries an average of 86,123 tons of suspended sediment per year into the Green River (USGS, 1971-1976). Approximately 90 percent of the high sediment load originates in Wyoming (USGS, 1971-1976).

Levels of fecal coliform bacteria appear high, however, standards for water quality are not established on BLM segments of Crouse, Davenport, Jackson, Red, and Sears Creeks. Except for Sears and Jackson Creeks, most contamination results from livestock grazing on privately owned bottom land, upstream from the public lands (BLM, 1977). Fecal contamination in Sears Creek exceeds state standards when livestock are not present and is believed to originate from big game (BLM, 1977). Fifty-three percent of Jackson Creek is on public land and fecal contamination increases as it flows through the public land section. Increases are probably due to livestock grazing along the stream's banks. It is estimated that public land is the source of 17 percent of the fecal contamination in the planning unit's waters (BLM, 1977).

Nutrients (primarily orthophosphate) are frequently high state standards in streams for which data are available. The source of these nutrients is unknown, but is believed to originate from vegetation decomposition (EPA, 1976).

7. Vegetation and Forage

Vegetation Types and Subtypes

The Three Corners Planning Unit has eight major vegetation types. Five of the major types are further divided into 11 subtypes as described on Table 2-5. Table 2-6 lists each type's acreage on the allotments. Figure 2-9 shows the distribution of the types and subtypes.

Riparian vegetation is found along 11 of the 15 streams in the planning unit. The unit's four other streams and two reservoirs do not support sufficient riparian plant species to be included in the type. Table 2-7 shows the amount of riparian vegetation on public land in the planning unit, its condition, and accessibility to livestock.

Composition and Ground Cover

Table 2-8 lists the percentage of vegetation ground cover and percentage of desirable plant species in the vegetation composition on each allotment. Desirable species are those that contribute most of the forage for grazing and browsing animals, are perennial, and are the major contributors to stable watershed and soil conditions. (See Appendix I-4 for methodology of determining vegetation composition and ground cover.)

TABLE 2-15

Deer Populations: Forage Use and Availability

Proposed Action Sub-component and Allotment	Estimated Population		Estimated AUMs Used		Estimated AUMs Produced		AUMs Available for Expansion[a]	
	Summer[b]	Winter[b]	Summer[b]	Winter[b]	Summer[b]	Winter[b]	Summer[b]	Winter[b]
CONTINUATION OF EXISTING MANAGEMENT	658	2,363	558	2,839	943	3,557	385	718
No Livestock Grazing	50	222	43	265	46	285	3	20
Rye Grass	50	221	43	308	46	285	3	20
Continue Allotment-Wide Grazing	382	1,245	322	1,517	667	1,845	335	328
Spring (April and May only)	52	1,100	44	1,323	134	1,459	90	136
Bridgeport	16	350	13	434	15	509	2	75
Taylor Flat-Watson	36	750	31	933	119	953	88	20
Spring and Fall (Begin in May)	120	120	101	144	297	355	196	211
Bowery Spring	26	120	22	144	40	355	18	211
Gadson Draw-Gerber Spring	36	0	31	0	74	0	43	0
Highway	5	0	4	0	46	0	42	0
McKee Spring	11	0	9	0	77	0	68	0
Natural Lake	31	0	26	0	50	0	24	0
Smokem-up	11	0	9	0	10	0	1	0
Spring-Summer-Fall (Begin in May or June)	147	0	124	0	162	0	38	0
Bates Spring	11	0	9	0	25	0	16	0
Beaver Dam	11	0	9	0	20	0	11	0
Blair Basin	11	0	9	0	9	0	0	0
East Cow	26	0	22	0	22	0	0	0
Log Cabin	20	0	17	0	19	0	2	0
Mail Draw	42	0	36	0	40	0	4	0
Mame's Hole-Bear Hollow	26	0	22	0	27	0	5	0
Spring-Summer (Begin in June)	63	42	53	50	74	31	1	0
Cove	54	39	46	40	66	27	20	0
West Cow	9	3	7	10	8	4	1	0

TABLE 2-15 (continued)

Proposed Action Sub-component and Allotment	Estimated Population		Estimated AUMs Used		Estimated AUMs Produced		AUMs Available for Expansion[a]	
	Summer[b]	Winter[b]	Summer[b]	Winter[b]	Summer[b]	Winter[b]	Summer[b]	Winter[b]
CONTINUATION OF EXISTING MANAGEMENT (continued)								
Continue Existing Improved Management	226	880	193	1,057	230	1,427	37	370
Rest Rotation	66	475	56	571	61	860	5	289
Hoy Mountain (Spring, Summer, Fall Grazing)	40	75	34	90	34	90	0	0
Red Creek (Spring Grazing)	26	400	22	481	27	770	5	289
Deferred Rotation	110	305	94	366	51	133	0	0
Dry Creek-South Pot Creek-Wild Mountain (Spring, Summer, Fall Grazing)	110	305	94	366	51	133	8	0
Deferred Rotation and Rest Rotation	50	100	43	120	118	434	75	314
Ruple Cabin (Spring, Summer Grazing)	50	100	43	120	118	434	75	314
IMPLEMENT IMPROVED GRAZING MANAGEMENT	1,389	2,903	1,187	3,486	1,487	4,309	300	823
Spring, Summer, and Fall, with Periodic Spring Deferment	1,276	2,567	1,091	3,083	1,311	3,332	220	249
Clay Basin-Antelope Flat-Goslin Mountain	307	950	263	1,142	264	1,152	1	10
Gadson	15	0	13	0	58	0	45	0
Hatch Cove	40	75	34	90	55	121	21	31
Hoy Flat	75	250	64	300	70	318	6	18
Jackson Draw-Crouse Canyon-Dry Hollow	140	325	120	391	120	392	0	1
Little Hole	201	300	172	360	197	418	25	58
Offield Mountain	40	201	34	241	36	247	2	6
Pot Creek	35	15	30	18	32	18	2	0
School Bus	26	0	22	0	42	0	20	0
Sear Canyon-Marshall Draw	111	276	95	331	109	396	14	65
Serviceberry Spring	40	0	34	0	52	0	18	0
Shiner	20	100	17	120	17	121	0	1
Warren Draw	125	25	107	30	135	36	28	6
Willow Creek	101	50	86	60	124	113	38	53

TABLE 2-15 (concluded)

Proposed Action Sub-component and Allotment	Estimated Population		Estimated AUMs Used		Estimated AUMs Produced		AUMs Available for Expansion[a]	
	Summer[b]	Winter[b]	Summer[b]	Winter[b]	Summer[b]	Winter[b]	Summer[b]	Winter[b]
IMPLEMENT IMPROVED GRAZING MANAGEMENT (continued								
Spring and Fall, With Regular Spring Deferment	113	336	96	403	176	977	80	574
Bealer Basin-Diamond Gulch-Diamond Spring	41	176	35	211	73	512	38	301
Cooper Draw	16	50	13	60	38	260	25	200
Davis Draw-Crouse Reservoir-Lambson	56	110	48	132	65	205	17	73
TOTAL[c]	2,047	5,266	1,745	6,325	2,430	7,866	685	1,544

Source: Three Corners Planning documents.

[a] The column AUMs Available for Expansion cannot be added because negative numbers occurring on Cove, West Cow, Dry-South Pot Creek-Wild Mountain, and Ruple Cabin use additional competative AUMs.

[b] Summer months are calculated at 5 months, winter months are the remaining 7 months of the year.

[c] Deer population estimates will not exactly convert back to AUMs because population figures were rounded up.

Upland Game

Cottontail Rabbit

Cottontail rabbits are distributed throughout the planning unit and are common at lower elevations. They are recognized as a game animal by the Utah Division of Wildlife Resources and a hunting season and bag limit has been designated. Cottontails also provide an important prey base for several carnivors and a variety of raptors found in the area.

Important forage plants for cottontails include nearly all forms of grass, forbs (summer), and browse plants such as fourwing saltbush, shadscale, rabbitbrush and black greasewood during the winter period.

Little is known concerning limiting factors associated with the habitat. Cycles in population are precipitated by, and durations derived from, changes in habitat combined with other factors such as disease and natural calamities (Wagner, USU).

Mourning Doves

Mourning doves are common through the summer months in the planning unit where habitat is adequate to sustain the species. They are locally abundant on Diamond Mountain in and around dry farms in the area, however, they thrive in other parts of the area as well. Most of the birds begin migrating from the area in early September.

Sage Grouse

Sage grouse are important game birds in the area. They inhabit higher elevations on the Diamond Mountain Plateau, Bender, and Goslin Mountains. Wintering areas are generally around the bases of these mountains as shown on Figure 2-13. The habitat is rated in good condition (Nielson, 1978). Riparian and wet meadow areas, which are particularly important to young birds, are limited and may be a restricting factor to the population. A good variety of desirable forbs provides adequate summer forage. An abundance of big sagebrush is available in all areas for winter forage. The population presently is static to a slight upward trend (UDWR, 1979).

Threatened or Endangered Species

No officially listed threatened species are known to inhabit the planning unit. The only endangered species known to occur in the area is the bald eagle. Approximately 15 bald eagles winter annually along the Green River in the Browns Park area (UDWR, 1978). They generally inhabitat the Green River corridor from November through late March or early April. Fish and waterfowl are the main food supply (Spencer, 1976), but non-game mammals provide a secondary food source. The American peregrine falcon, an endangered species, is known to inhabit other areas in northeastern Utah, but no sightings have been made in the planning unit. An active aerie has been identified in Dinosaur National Monument at Streamboat Rock just below the Wild Mountain Allotment. The peregrine could be expected to use the air space above the allotment. The principal food items of peregrine falcons are passerine birds, waterfowl, and shorebirds which can comprise up to 95 percent of their diet (Eyre and Paul, 1973; Snow, 1972).

Of five possible visual resource management (VRM) classes, four have been identified within the planning unit as shown on Figure 2-14. Because the management objectives for each VRM class allow a different degree of modification of the landscape, VRM classes are the basis for determining whether or not a modification would result in a visual impact. (Methodology for determining VRM classes, and the management objectives for each VRM class are described in Appendix II-8.)

12. Land Use

a. Recreation Resources

The planning unit provides less than 1 percent of the total recreational use within Daggett and Uintah counties as shown on Table 2-20. Most recreational use on the planning unit is dispersed.

Hunting of elk, deer, antelope, and sage grouse is the major recreation use, but is somewhat limited because private lands on the valley floors restrict access to the higher public lands. Trout fishing occurs along the Green River, Willow Creek, Jackson Creek, and at Crouse Reservoir and Calder Pond.

The Green River is used for float-boating from the base of Flaming Gorge Dam through Browns Park.

Figure 2-15 shows the unit's 31 inventoried recreation sites on public land administered by BLM. The sites are used for picnicking and camping. Limited facilities are available at six of the sites along the Green River.

The planning unit also provides general sightseeing opportunities for travelers between Flaming Gorge National Recreation area and Dinosaur National Monument. Four-wheel driving, usually associated with hunting, occurs on unmaintained trails throughout the unit.

Some private land has been subdivided to provide building sites for summer homes in the Taylor Flat area.

b. Livestock Grazing

The predominant land use in the planning unit is livestock grazing. The planning unit is used by 45 livestock operators and all use public lands administered by BLM in conjunction with other lands such as U. S. Forest Service, National Park Service, state, or private. Most cattle operations use only private and state lands in conjunction with the public lands. Most sheep operations use U. S. Forest Service lands, private, and state lands in conjunction with public lands. Table 2-21 shows how livestock grazing use is distributed on the planning unit.

Grazing Operations

There are three different types of livestock operations in the planning unit: cow-calf, yearling cattle, and sheep.

Cow-calf operations have a basic herd of cows, each cow with a young calf, which are grazed on the planning unit during the spring, summer, and fall grazing seasons (April 1 to November 30). (Most operators use the planning unit during the summer grazing season [May 15 to October 30].) Cows give birth to calves on private farms and ranches during the early spring, and are then trucked or trailed, with their calves, to the planning unit for the

On allotments under improved management, the operators also place salt on ridges, away from water, to encourage cattle to use less accessible areas. Some range riding takes place to move cattle into these areas. Because the allotments are cross-fenced into pastures, however, the cattle generally move onto all grazable areas of the pasture without the encouragement of a rider.

Grazing is somewhat more evenly distributed on sheep allotments because sheep can be herded into steep, rough terrain. In yearling cattle operations grazing is more even because yearling cattle are more active than cows, will graze farther from water, and tend to use steeper areas.

Production Characteristics

In cow-calf operations, calves are generally born during March and April on private farms. Calves weigh between 120 to 200 pounds when they are taken to the summer ranges. Cattle are moved off the summer ranges at the end of October and calves are weaned and sold. Calves weigh between 350 to 430 pounds at weaning.

In a few yearling cattle operations, weaner steers are bought in the fall and fed through the winter. Steers weigh between 500 and 600 pounds when they are moved to the planning unit and weigh between 750 and 900 pounds when they are moved from the planning unit. Most steers remain on the allotments for 5 1/2 months (165 days) which translates into a weight gain of between 1.5 to 2 pounds per day.

Sheep operations generally start lambing around May 5 and continue through May 30. The lambs are generally cut out of the herd and sold when the sheep come off Diamond Mountain in the fall. Lambs weigh between 75 to 85 pounds at this time.

c. Transportation Network

Utah Route 260 enters and crosses the planning unit through Antelope Flat and continues to Rock Springs, Wyoming. Colorado Route 318 enters at the Browns Park area, but is unpaved on the planning unit. The Diamond Mountain County Road enters the southeast corner of the unit, but is also unpaved on the unit. An additional paved road leads to the Jones Hole National Fish Hatchery, but is not paved its entire length (see Figure 1-2).

Dirt and gravel roads provide access, but are sometimes hazardous in wet or cold weather. Public access is sometime denied because some of these roads are on private land and land owners may lock their gates. Landowners provide a key to the BLM so that administrative access to BLM lands is provided.

d. Special Designations

(1) Wilderness

BLM's Wilderness Review officially began within the planning unit in December, 1978. Appendix II-9 summarizes the process. The initial step required in the review process--the identification of wilderness inventory units (roadless areas of 5,000 acres or more bounded by a road or non-public lands)--has been completed. Figure 2-16 shows the 11 identified inventory units, which contain approximately 128,000 total acres and encompass all or part of 25 allotments.

Because BLM's wilderness review is an ongoing process, wilderness data within the Three Corners Grazing Management Draft Environmental Statement has become outdated since the draft statement was printed. Changes indicated below update the discussion of wilderness in the final environmental statement to coincide with current wilderness data available in BLM's "Final Initial Wilderness Inventory," printed in August, 1979.

Five of the 11 wilderness inventory units discussed on Page 2-99 and shown on Figure 2-16 have been determined to lack wilderness character and are no longer subject to BLM's wilderness review process. Wilderness inventory units no longer subject to wilderness review are located within Rye Grass, Bridgeport, East Cow, Mame's Hole-Bear Hollow, Cove, Red Creek, Clay Basin-Antelope Flat-Goslin Mountain, Little Hole, Warren Draw, Cooper Draw, Davis Draw-Crouse Reservoir-Lambson.

It has not yet been determined which, if any, of the remaining six wilderness inventory units have wilderness character, and portions of these units are presently undergoing further wilderness review. Wilderness inventory units presently undergoing wilderness review encompass a total of approximately 66,658 federal acres and are located in portions of the following 14 allotments: Willow Creek, Taylor Flat-Watson, Sears Canyon-Marshall Draw, Jackson Draw-Crouse Canyon-Dry Hollow, Hoy Mountain, Serviceberry Spring, Pot Creek, Ruple Cabin, Offield Mountain, Shiner, Hoy Flat, Bowery Spring, Dry Creek-South Pot Creek-Wild Mountain, and Bealer Basin-Diamond Gulch-Diamond Spring.

Water Resources

It is expected that there will be no change to the quantity of water in the area. The quality of water will likely decline with increased big game numbers and recreation visitor use of the area.

Animal Life

The proposed Browns Park Road through the Browns Park-Antelope Flat area would cause significant increases in visitors to the area. Loss of big game habitat would result from building summer homes. Some animals would be lost through highway mortality. Poaching of game animals will increase as will molesting of species during the reproduction period and wintering seasons. Indiscriminate shooting of non-game species would also increase. Increased visitor use could cause serious problems in Canada goose production at the Browns Park Waterfowl Management Area.

Increased fishing pressure may require the planting of "catchable size" fish in order to maintain fisherman success.

Cultural Resources

Cultural resources will continue to be subject to vandalism and weathering. Vandalism will increase as recreational use of the area increases.

Paleontological

Increased visitor use of the paleontological resource will result in increasing destruction and collection of fossils.

Visual Resources

All future development, including the proposed Browns Park Road, cabin sites on Diamond Mountain, inventoried recreation sites, transmission lines, pipelines and gas fields in Clay Basin, will alter and in some cases dominate the natural landscape in localized areas. Much of the unit, however, will continue to appear natural. Public lands under the jurisdiction of the BLM will be managed within VRM guidelines.

Land Use

Recreation Resources

A 5 percent annual increase in recreation use is projected for Daggett and Uintah Counties (Three Corners PAA). If the Browns Park road is completed, improved access would accelerate the projected increase within the planning unit. River use may increase as much as 40 percent annually (Three Corners PAA).

Hunting, fishing, and floatboating are expected to continue as the major recreational uses. Increased use pressures would result in less hunter and fisherman success, and a reduction in quality of the recreational experience.

As demand increases and the availability of funds allow, BLM will develop many of the inventoried recreation sites within the planning unit.

CHAPTER 3
THE ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

A. INTRODUCTION

This chapter identifies probable environmental impacts of the proposed action. The analysis of probable impacts shows the expected magnitude, intensity, duration, and incidence. Short-term impacts are those lasting up to 5 years. Impacts expected to last 20 years are considered long-term. Impacts are traced from the proposed action to man and his environment. Discussions or impacts are based on detailed analysis and cause-effect documentation process described in Appendix III-1.

The most dominant direct impact from livestock grazing would occur on the vegetation resource. Changes in vegetation production, condition, trend, and potential would indirectly affect the other resources. Direct impacts would also occur, to a lesser extent, to other resources (such as soil compaction by livestock or visual effects of range developments).

Each resource is discussed in two parts: (1) a narrative which identified interrelationships among resources and cummulative impact conclusions for the particular resource and (2) a two column listing which provides the environmental impact details and analysis as related to the proposed action.

The reader may obtain an overall, or general, understanding of the impacts by reading only the narrative for each resource.

The impact discussion presented in this environmental statement does not cover all of the intricate aspects of the ecological conditions in the Three Corners Planning Unit. Rather, the statement highlights those portions of the analysis which are considered to be of primary interest to the public, to other agencies, and to resource decision-makers for the public lands involved. Significant impacts are those which 1) substantially affect the quality of the human environment, 2) are controversial or of high public concern, or 3) affect a legally protected species or resource.

Climate, air quality, topography, and geologic setting are not discussed because no significant impacts were identified.

IMPACT ON WATER RESOURCES

The analysis of the impacts caused by changes in grazing practices and related developments focuses on (1) water quantity and (2) water quality.

The analysis has indicated that the proposal would not markedly alter the quantity of water consumed by livestock in the planning unit, but proposed water developments would distribute the water supply more evenly. Livestock and wildlife would not compete with one another for available water due to the small consumptive use in comparison to the total annual yield.

WATER ANALYSIS SECTION

Relationship to Proposed Action	Existing Environment, Probable Impacts, and Affected Area
WATER QUANTITY	
Existing improved management is proposed to continue on Red Creek, Hoy Mountain, Ruple Cabin, and Dry Creek-South Pot Creek-Wild Mountain, comprising 39,538 acres of public land. Improved grazing management and periodic rest is proposed on 17 allotments that comprise 115,568 acres of public land. The vegetation ground cover is expected to increase slightly and sediment yield to decrease slightly.	Current annual water yield from public land in the planning unit is approximately 130,460 acre-feet. Because the total vegetation cover is expected to change minimally, only a slight decrease in water yield would occur over the next 15 to 20 years (Branson, 1972). All 21 allotments in these proposal components would be affected.
It is proposed to develop 13 springs, install 15 miles of pipeline, 6 storage tanks, 30 troughs, and construct 3 reservoirs to provide additional watering areas for livestock. The water for the proposed developments originates from springs and does not now flow off the planning unit.	Current consumptive water use on the planning unit is about 23 acre-feet annually. This amounts to 0.02 percent of the available water. Because the water proposed for use in the developments does not currently leave the planning unit, the developments would have no impact on total water yield.
The proposal to spray 1,260 acres in two allotments with 2,4-0 and chain 400 acres in one allotment for an increase in the amount of grass in the vegetation composition would reduce dense stands of sagebrush and make forage available to livestock. Ground cover would be reduced temporarily on 1,180 acres proposed for treatment.	The vegetation cover on 1,180 acres would decrease slightly and water yield would increase for 1 to 3 years. The exact amount of increased water yield is not known. Because only 1,180 acres are involved, the increase is expected to be minimal.
WATER QUALITY	
Continued improved grazing management is proposed on Red Creek and Ruple Cabin allotments, comprising 20,558 acres of public land. The vegetation ground cover is expected to increase slightly.	Currently three streams flow through these two allotments. The sediment carried by these streams would be slightly reduced. The exact amount is not known (PSIAC, 1968; Branson, 1972). This reduction would occur gradually within 15 to 20 years.
Implementation of improved grazing management and periodic spring rest are proposed on 17 allotments that comprise 115,568 acres of public land. Vegetation ground cover is expected to increase slightly.	The sediment load of 12 streams which flow through 10 of the 17 allotments would be slightly reduced gradually over a period of 15 to 20 years. The exact amount of reduction is not known (PSIAC, 1968; Branson, 1972).
Construction of 3.5 miles of fence, to protect riparian areas, is proposed in Little Hole and Sears Canyon-Marshall Oraw allotments along Davenport, Jackson, Crouse, and Sears Creek. Riparian vegetation would improve from fair to good. Watershed conditions would be maintained or improved.	Because riparian vegetation condition is expected to improve along 3.5 miles of stream, the levels of Orthophosphate would increase as a result of increased amounts of decaying vegetation (EPA, 1976). The exact amount of this increase is not known, but levels are currently high and at times exceed state standards. This change would take place gradually over 15 to 20 years.
The proposal to spray 1,260 acres in two allotments with 2,4-0 for an increase in the amount of grass in the vegetation composition would reduce dense stands of sagebrush and make forage available to livestock. Vegetation ground cover would be reduced temporarily on 1,260 acres proposed for treatment.	The application of the herbicide 2,4-0 is not expected to affect the quality of ground water. It is stated in the final environmental statement on "Vegetation Management with Herbicides in the Eastern Region" by the U.S. Forest Service that leaching of 2,4-0 in the soil is a slow process and seldom penetrates more than a few inches.

ANIMAL LIFE ANALYSIS SECTION (continued)

Relationship to Proposed Action	Existing Environment, Probable Impacts, and Affected Area
ELK	
Existing livestock management practices are proposed to continue on 22 allotments. Impacts would be caused by changes in vegetation composition from either grass to browse on 1 allotment or browse to grass on 2 allotments. It is also proposed to implement improved grazing management on 17 allotments. Impacts would be caused by a vegetation composition change toward grasses on all these allotments.	Elk summer and winter ranges would improve in quality on 118,428 acres (19 allotments) due to a change from browse to grass. Boyd, (1970) found a strong preference by elk for grass dominated ranges during all seasons. Elk summer and winter range qualities would decrease in value on 12,297 acres (Taylor Flat-Watson Allotment) due to increasing browse composition and decreasing grass composition. Again, this assessment is based on Boyd's (1970) work on the White River elk herd in Colorado. These quality changes would occur within 15 to 20 years, while no change is expected on 19 allotments.
It is proposed to allocate 4,838 AUMs initially to elk and an additional 1,253 AUMs in the long-term for a total of 6,091 AUMs for elk on the planning unit.	Potential forage would be allocated for an initial increase of 345 elk on a 12-month basis and a long-term increase of 542 elk on a 12-month basis. This increase would be added to a summer base of 345 elk and to a winter base of 473. This increase of animals is dependent upon management policies of UDWR.
An additional 46 watering sites on 16 allotments are proposed.	Water development would benefit elk and their habitat. Leopold (1933) found an increase in water would allow better elk distribution and better utilization of the increased forage allocation.
Treating of sagebrush with 2,4-D on 1,260 acres is proposed on the Hoy Mountain and Ruple Cabin allotments.	These areas are spring, summer, and fall elk ranges (see Deer for discussion).
Elk objectives are to maintain or improve habitat and to allocate additional AUMs for elk. Overall, these objectives would be met.	
ANTELOPE	
Improved grazing management is proposed on two allotments within inventoried antelope range and spring grazing is proposed on Bridgeport. Impacts would be caused by changes in vegetative composition from browse to grass.	Overall habitat qualities (presently good condition, UDWR, 1979) on both summer and winter ranges are expected to decrease on 42,292 acres (on Willow Creek, Clay Basin-Antelope Flat-Goslin Mountain, and Bridgeport allotments) as grass increases. Yoakum (1967) shows in his bibliography of literature on antelope that browse and forbs are primary constituents of the dietary intake of antelope. Grasses, which are predicted to increase, make up only a minor dietary percentage, however, 380 AUMs of forage would still be available for antelope.
Also proposed is an additional 25 AUMs, yearlong for antelope.	Potential forage would be allocated for an initial and long-term increase of 20 antelope (25 AUMs) on a 12-month basis. The increase would be added to a base on 287 wintering antelope on public lands and 284 antelope which summer there. This increase of animals is dependant upon management policies of UDWR.
An additional 19 watering sites are proposed on 3 allotments within inventoried antelope ranges.	Overall, habitat qualities would benefit from the development of 19 additional water sites within the next 20 years.
Objectives of allocating 380 AUMs of forage would be met.	
UPLAND GAME	
Under the proposed allotment-wide grazing on 17 allotments, one allotment would change from grass to browse. No change is expected on the remaining 16 allotments under this proposal.	Habitat conditions are rated fair to good for sage grouse, fair to good for cottontail rabbits and fair for mourning doves (UDWR, 1979). Changes in composition would not affect upland game.

ANIMAL LIFE ANALYSIS SECTION (continued)

UPLAND GAME (continued)

Relationship to Proposed Action	Existing Environment, Probable Impacts, and Affected Area
Of the 21 allotments included under improved grazing management, the composition will generally change from browse to grass.	No adverse impacts to upland game is expected (UDWR, 1979).
The proposed spraying of 1,260 acres of sagebrush on the Ruple Cabin and Hoy Mountain allotments, where vegetation conversion would occur on sage grouse habitat.	As described in the section on deer, 2,4-D spraying would have no direct effect on mammals. 2,4-D has been found to be generally less toxic to birds than mammals. The oral lethal dose for birds with herbicide treated feed is typically greater than 5,000 p/m. Under field conditions, a bird would have to consume daily all the herbicide aerially applied to approximately 10 acres to duplicate the 5,000 p/m feed under controlled trials. Water solutions of 2,4-D, equivalent to 10 times recommended field concentrations, were sprayed on fertile pheasant eggs preceding incubation. No treatments were found to cause any adverse effect on hatching success, incident of malformed embryos, or subsequent chick mortality relative to water-sprayed control eggs (Water, 1979). The vegetation change by spraying would improve mourning dove habitat through increased grass seed production (Sanderson, 1977). Sage grouse could benefit if 20 to 30 percent of the sagebrush canopy is left (Wallsted, 1975). However, a reduction of the sagebrush canopy below 20 percent would reduce the quality of sage grouse habitat.

THREATENED OR ENDANGERED SPECIES (BALD EAGLES AND PEREGRINE FALCONS)

Relationship to Proposed Action	Existing Environment, Probable Impacts, and Affected Area
There are no components of the proposal which relate directly to bald eagles and peregrine falcons.	Four (4) allotments (Bridgeport, Taylor Flat-Watson, Red Creek Flat and Little Hole)--20,595 acres, support 12-18 wintering bald eagles (Wagner, 1977). Impacts from allotment-wide grazing and improved management are expected to be minimal since eagles rely heavily on fish, and waterfowl as a secondary source, for food. The prey base is presently stable (UDWR, 1979) and not expected to change during the next 15 to 20 years as a result of proposed grazing management. Peregrine Falcons rely primarily on shorebirds and other avian fauna as a prey base. The proposal would not adversely affect this base or the falcons.
Objectives relating to the management of threatened or endangered species require protection of their habitat.	

FISH

Relationship to Proposed Action	Existing Environment, Probable Impacts, and Affected Area
Under intensive grazing management, increased streambank cover could be expected on Jackson and Willow Creeks. This cover would be further improved by fencing riparian habitat along 1.4 miles of Jackson Creek. Static conditions are expected to remain on fish habitat related to allotments with continued allotment-wide grazing. An objective provides for improvement of riparian habitat and streambank cover.	The section of Green River associated with continued allotment-wide grazing would continue in a stable condition. That section associated with improved grazing management is presently rated in good condition and this habitat would continue to improve. Red Creek would continue to be the principal cause of deteriorating habitat (USGS, 1971-1976). With improved grazing management, fencing the riparian area at Devils Hole on Jackson Creek would improve streambank cover. Trout would benefit from cooler water temperatures and increased escape cover (Armour, 1978). Within 9 years (Wingar, 1977), the trout population could increase from the present 100 fish per mile to about 200 fish per mile on Jackson Creek (a total increase of about 70 fish on the BLM portion of the stream). Improved conditions would also result on Willow Creek under improved grazing management. Improvements on Willow Creek would occur within 15 to 20 years. With improved grazing management, increases can be expected in grasses and associated ground cover adjacent to shorelines on Crouse and Calder reservoirs.

Assessment

Spring deer ranges would improve on 118,428 acres during the 15 to 20 year project life because of increased grass production. Winter ranges would decrease in quality during the same period, as grazing systems increased the amount of desireable grasses and reduce wildlife browse. There are 8,070 AUMs of deer forage reserved in the unit with a projected increase to 10,299 AUMs. The increases would come about as a result of the intensive management of 20,755 acres to maintain or increase shrubby species and the improved quality of 29,440 acres due to development of additional water. The additional allocation would provide for an additional 1,080 deer to add to the lease of about 2,000 summer and about 5,000 winter deer. However, there is some question as to the ability of the winter range to support that increase in deer.

About 118,428 acres of elk summer-winter ranges would be improved by increasing the amount of desireable species through intensive management. There would be a decrease in the vegetation quality on 12,297 acres of fall-winter range managed to maintain or increase shrubby species. There are 4,838 AUMs of forage initially allocated to elk and 6,091 AUMs would be allocated in the long-term through grazing systems which result in an increase in grass species. Summer elk populations could increase from 345 to double that number, and winter elk numbers would increase from 542 to about 1,000 elk by the end of 20-year period.

Antelope habitat quality would decrease on 42,292 acres as a result of grazing systems which would increase the amount of grass and decrease the forbs species. Even with this change in composition, it is felt that existing space limits the expansion of the herd. Biologists, however, do feel that there is room for an additional 25 AUMs which would result in a total of 380 antelope AUMs in the next 15 to 20 years. This would allow for an increase of 20 antelope.

Vegetation composition ground cover and plant vigor would continue to improve during the next 15 to 20 years. The impacts to upland game, threatened and endangered species, fish, waterfowl, non-game mammals, non-game birds, reptiles and amphibians, and invertebrates are not significant and are not quantifiable or measureable.

Conclusion

Because many outside influences other than forage affect wildlife numbers, it cannot be predicted whether wildlife numbers can increase to the allocated levels.

CHAPTER 5
ADVERSE IMPACTS THAT CANNOT BE AVOIDED SHOULD THE PROPOSAL BE IMPLEMENTED

INTRODUCTION

Implementation of the proposed action would result in certain adverse impacts. This chapter summarizes the adverse impacts addressed in Chapter 3 because no mitigating measures were proposed in Chapter 4.

WATER RESOURCES

Construction of 3.5 miles of fence to protect riparian areas along Davenport, Jackson, and Crouse Creeks would increase vegetation cover along these stream channels. Levels of orthophosphate would increase as this vegetation decays. The exact amount of this increase is not known, but levels are currently high and at times exceed state standards. This change would take place gradually for 15 to 20 years.

VEGETATION AND FORAGE

Should the proposal be implemented, grasses would increase and big sagebrush decrease on all areas of the planning unit. Composition and vegetation ground cover would not reach desirable levels on 19 allotments (43,251 acres - 23 percent of the public land in the planning unit).

Possible inadvertant loss of individual plants through disturbance and unknown response of plant species through grazing treatments may occur.

Continuation of spring cattle grazing in the Red Creek allotment would change the improving trend on 4,889 acres to static. The existing grass-shrub mix in the composition would be perpetuated and result in an adverse impact to forage condition for livestock.

ANIMAL LIFE

Winter range for mule deer would decrease in quality in the Clay Basin-Antelope Flat-Goslin Mountain, Willow Creek, Jackson Draw, Sears Canyon and Little Hole allotments as heavy winter use of browse by deer and lighter use of grass by livestock allows grass to increase.

The primary forage constituents for antelope are browse and forbs. The improved grazing management proposed on 2 allotments (Willow Creek and Clay Basin-Antelope Flat-Goslin Mountain, 42,292 acres) would eventually cause a vegetation composition change favoring grass production. This would decrease the quality of the habitat.

Those allotments proposed for improved grazing management would eventually experience a change in vegetation composition to more grass. On allotments supporting sage grouse populations, the quality of the habitat would decline if big sagebrush, an important forage and cover plant for the species, is reduced to less than 20 percent of the vegetation composition.

CULTURAL AND PALEONTOLOGICAL RESOURCES

Regardless of the standard design, construction, and operation features, inadvertant damage could occur to cultural and paleontological resources in

CHAPTER 6

RELATIONSHIP BETWEEN LOCAL SHORT-TERM USE OF MAN'S ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

INTRODUCTION

The allocation of currently unused forage to big game animals, increase in livestock forage allocation and range developments would derive short-term values from the environment, and affect its long-term productivity. In this statement, short-term is considered as 20 years or less after implementation, and long-term is beyond 20 years.

WATER

Sediment yield would be reduced in the long-term. Levels of orthophosphates would increase and remain above state standard levels for the long term.

VEGETATION AND FORAGE

Grass would generally increase on about 83 percent, remain relatively static on 6 percent, and decrease on 11 percent of the planning unit. While shrubs, including big sagebrush, would respond by increasing on 6 percent, decreasing on 57 percent, and remaining more or less static on 37 percent of the planning unit. On those allotments where no grazing would be allowed or improved management would continue or be implemented, it is anticipated that a noticeable change could occur within 15 to 20 years. Where existing allotment-wide grazing would continue, or where spring cattle grazing has been introduced, the change may not be apparent for at least 20 years. In the long-term, it appears that the vegetation on the planning unit would lose much of its current value for browsers (such as deer, antelope and sheep) and become more valuable for grazers (such as elk, and cattle). Currently vegetation appears to be providing good ground cover. Very little erosion is occuring and sediment production is low. Vegetation ground cover for watershed protection, would improve, consistent with increases in grass and loss of shrubby species.

Approximately 1,749 acres of vegetation could be disturbed during construction of 71 facilities (fences, reservoirs, springs, etc.). This disturbance of vegetation could cause a very slight increase in erosion and sediment yield for 1 to 3 years, but because of the high productive potential found in the planning unit, disturbed areas would quickly revegetate and return to former conditions. It is not known whether the disturbance would adversely or beneficially affect threatened or endangered plant species because their habitat requirements are unknown in the planning unit.

All 23 acres of riparian vegetation currently in fair condition, would be in good condition within five years. A long term improvement of habitat would result for aquatic wildlife and many species of terrestrial animals.

The long-term improvement of forage conditions and increase of 1,860 AUMs of forage for livestock would help stabilize livestock operation and result in a long-term strenthening of that segment of the local economy.

ANIMAL LIFE

The long-term impacts to wildlife resulting from this conversion would be varied. For instance, proposed big

CHAPTER 7

ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITTMENTS OF RESOURCES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

Irreversible committment is defined as incapable of being reversed; once initiated, action would continue. Actions committing future generations to continue a similar course may be considered irreversible. Irretrievable is defined as irrecoverable; not retrievable; once used, not replaceable.

Table 7-1 is a list of irreversible and irretrievable committments for the proposed action.

TABLE 7-1

Irreversible and Irretrievable Commitment of Resources

Item of Use	Reason for Committment	Committment Irreversible	Irretrievable
Soil	Erosion resulting in loss of soil during construction of range developments.	yes	yes
Water	Loss of water quality through build up of orthophosphate.	no	yes
Vegetation	Long Term Annual Consumption of 19,433 AUMs of forage for livestock.	no	yes
	Long Term annual consumption of 16,770 AUMs for forage for wildlife.	no	yes
	Short Term disturbance of 1,751.2 acres of vegetation.	no	yes
	Possible loss of an unknown number of individual threatened or endangered plants.	no	yes
	Occupation of 91.2 acres by range developements.	no	yes
Animal Life	Some loss of habitat would occur beyond 20 years from the vegetation conversion from browse to grass. The extent of this loss is unknown. Species affected by this committment include deer and antelope winter ranges and sage grouse areas.	yes	no

Impact on Socioeconomic Conditions

The total livestock industry, including those affected by this alternative would account for about 3.2 percent of the total personal income in Uintah and Daggett counties (BLM, PAA). The implementation of the alternative on the Three Corners Planning Unit would account for a 4 percent reduction of the total livestock income and 0.3 percent reduction of the total personal income in the two counties. The influence which this alternative would have on the state and local community economics is considered insignificant and is not pursued further.

The present and expected net income for ranch operators are shown for each of the three ranch sizes.

	Existing Situation	Alternative
Small Operator	$ 1,150.00	$ -1,008.00
Medium Operator	$ -6,914.00	$-16,727.00
Large Operator	$57,044.00	$ 43,621.00

The total net income of livestock would be $110,561.00.

Using this table as a base, the net value of the grazing on public land in the planning unit is $2,158.00 to each small operator (26); $9,813.00 to each medium operator (16); and $13,423.00 to each large operator (3). The current value of grazing on the public lands within the planning unit is $253,385.00.

This section completely replaces the References Cited in the Draft ES.

REFERENCES CITED

Ames, C. R., 1977. "Wildlife Conflicts in Riparian Management." A Symposium by the USDA, U. S. Forest Service.

Armour, Carl L., 1977. "Effects of Deteriorated Range Streams on Trout." U.S. Department of the Interior, Bureau of Land Management. Boise, ID. 7 pp.

Athearn, Frederic J., 1976. An Isolated Einire: A History of Northwest Colorado.

Athearn, Frederick, J., 1976. An Isolated Empire: A History of Northwest Colorado. Bureau of Land Management, Colorado State Office, Denver Colorado.

Balentine, John F., 1974. Range Development and Improvements. Edition 2. BYU Press, Provo, Utah.

BEA, 1978. "Economic Values of Utah." Bureau of Economic Analysis.

Bell, Milo C., 1973. Fisheries Handbook of Engineering Requirements and Biological Criteria. Fisheries Engineering Research Program, U.S. Army Corps of Engineers, North Pacific Division: Portland, Oregon.

Bentley, R. Gordon, Jr., Eggleston, Keith O., 1978. The Effects of Surface Disturbance on the Salinity of Public Lands in the Upper Colorado River Basin. February 1978. U.S. Department of Interior, Bureau of Land Management. 180 pages.

Bertram, Ronald C.; Renpel, Ronald D.; 1977. Migration of the North Kings Deer Herd. California Fish and Game. Wildlife Management Branch, California Dept. of Fish and Game.

BLM, 1978. "Diamond Mountain and Browns Park Unit Resource Analysis," (unpublished manuscript). Bureau of Land Management, Vernal District, Vernal, Utah.

BLM, 1978. "Trend Studies on Diamond Mountain and Browns Park Planning Unit," (unpublished). 1967-1978. Bureau of Land Management, Vernal District, Vernal District.

BLM, 1979. "Staff Report by Alan Partridge, BLM, Richfield District, on Forage Production," (unpublished).

BLM, 1976. "Ground Cover in Connection With Proposed Spray Projects," (personal communication). David Moore, Bureau of Land Management, Vernal District.

BLM, 1977. "District Water Quality Summary." July, 1977. Robert Bessie, Bureau of Land Management, Vernal District.

BLM, 1978. "Hunter Day Values," (personal communication with Robert L. Jensen by Margaret Matthies).

BLM, 1978. "Vegetation Trend Studies." Bureau of Land Management Vernal District.

BLM, 1979. "Evaluation of District Forage Condition and Trend." March 1979. Bryon K. Toleman, Bureau of Land Management, Vernal District.

BLM, 1979. "Final Initial Wilderness Inventory." August, 1979. Bureau of Land Management, Utah State Office.

Borem, 1978. "Calf Gains in Relation to Proper Range Management Activies," (Technical Report). Byron K. Toleman, Bureau of Land Management, Vernal District.

Boren, Duane, 1978. "Weaning Weights," (personal communication with Byron Tolman). August 14, 1978.

Boyd, Raymond J., 1970. Elk of the Whiteriver Plateau, Colorado.

Branson, Farrel A.; Gifford, Gerald E.; Owen, J. Robert; 1972. Rangeland Hydrology. Range Science Series #1. Society for Range Management, Denver Colorado.

Breternatz, David A., 1965. Archaeological Survey in Dinosaur National Monument, Colorado-Utah, 1963-1964. May, 1965. University of Colorado, Boulder, Colorado.

Breternitz, David, 1970. Archaeological Excavations in Dinosaur National Monument, Colorado-Utah, 1964-1965. August, 1970. University of Colorado Press, Boulder, Colorado.

Call, Mayo W., 1966. Beaver Pond Ecology and Beaver-Trout Relationships in Southeastern Wyoming. Federal Aid Project FW-14-4. Laramie: University of Wyoming.

Clements, Lloyd R., 1978. "Range Cattle Budgets." USU.

Cook, C. Wayne, 1966. "The Role of Carbohydrate Reserves in Managing Range Plants." Utah State University, Logan Utah.

Cook, C. Wayne, 1966. Development and Use of Foothill Ranges in Utah. Bulletin 461. September 1966. Utah Agricultural Experiment Station, Utah State University, Logan, Utah.

Crosby, Chad, 1978. (Personal Communication.) April 18, 1978.

Daggett County, 1973. "County Zoning Ordinance." Daggett County.

Dillon, Claude C.; Wallenmeyer, Daniel; 1966. "A Rancher's Success With Continuous Deferred Grazing in Washington State." Journal of Range Management. 19 (6). Society for Range Management, Denver, Colorado.

REFERENCES CITED (continued)

Duff, Don, 1977. "The Big Creek Aquatic Habitat Management and Impact From Livestock Grazing." Presented at annual meetng of Bonneville Chapter of American Fisheries Society. February 4-5, 1977. Salt Lake City.

Duff, Donald D., 1978. (Personal Communication.) June 22, 1978.

Dwyer, Don D., 1975. "Response of Livestock Forage to Manipulation of the Pinyon-Juniper Ecosystem." The Pinyon-Juniper Ecosystem Symposium. Utah State University: Logan, Ut.

Edmonds, Roy, 1978. (Personal communication between Chuck Borup, UBAC and Roy Edmonds, Bureau of Land Management, Richfield District).

England, Larry, 1979. "Possibility of Endangered Plant Species in the Three Corners Plannin Unit," (personal communication with Bryon K. Toleman). Bureau of Land Management, Vernal District.

Eyre, Larry and Paul, Don, 1973. Raptors of Utah. Publication Number 73-7. Utah Division of Wildlife Resources.

Folks, Neil, 1978. "Canada Geese Production in Browns Park," (personal communication with David Zalunardo, BLM). Utah Division of Wildlife Resources.

Franzen, Robert W., 1968. "Progress Report on Deer Studies to the Deer Research Committee for Dinosaur National Monument.

Geertsen, Reed, et al., 1975. "Better Communities for Utah." Technical Report #8. Department of Sociology, Utah State University. Logan, Utah.

Hacking, Jude, 1978. "Weight Gain on Steers," (personal communication with Byron Tolman). August 16, 1978.

Hansen, Wallace R., 1969. The Geologic Story of the Uinta Mountains. U. S. Geological Survey. U. S. Government Printing Office.

Hansen, Wallace, R., 1965. "Geology of the Flaming Gorge Area, Utah-Colorado-Wyoming." U. S. Geological Survey Professional Paper 490.

Hasley, N. W., 1956. Management of the White-tailed Deer in its Environment in the Deer of North America. The Stackpole Co., Harrisburg, Pa. The Wildlife Management Institute, Washington D. C.

Heady, Harold F., 1975. Rangeland Management. McGraw-Hill Book Company, New York.

Hickey, Wayne C., Jr., 1966. A Discussion of Grazing Systems and Some Pertinent Literature. U.S. Forest Service, U.S. Department of Agriculture, Denver Colorado.

Hintze, Lehi F., 1973. "Geologic History of Utah." Brigham Young University Geology Studies. Volume 20, Part 3. July, 1973. Department of Geology, Brigham Young University, Provo, Utah.

REFERENCES CITED (continued)

Intermountain Region Forest Service, 1969. Range Environmental Analysis Handbook. FSH 2209.21. USDA, Forest Service, Ogden Utah.

Kimbal, Jim and Savage, Frank, 1977. Diamond Fork Aquatic and Range Habitat Improvement. USDA Forest Service, Uintah National Forest, Utah.

Knowles, Craig J., 1975. "Range Relationships of Mule Deer, Elk, and Cattle in a Rest Rotation Grazing System During Summer and Fall," (unpublished manuscript). June 3, 1975. Montana State University.

Koenigs, Roman H., 1976. "The Direction of Policies in the Management of National Resource Lands." Presented at annual meeting of the Western Association of State Game and Fish Commissioners. July 27, 1976. Sun Valley, Idaho.

Kufeld, Roland C. Et al., 1973. Foods of the Rocky Mountain Mule Deer. USDA FS Research Paper RM-111. Prepared for Rocky Mountain Forest and Range Experiment Station, Colorado Division of Wildlife, Denver, Colorad. p. 1-31.

Laycock, William A., 1967. "How Heavy Grazing and Protection Affect Sagebrush-Grass Ranges." Journal of Range Management. 20(4). Society for Range Management, Denver, Colorado.

Leopold, Aldo, 1933. Game Management.

Lindsay, LaMar W., 1977. An Archaeological Survey of Clay Basin, Daggett County, Utah. June 9, 1977. Antiquities Section, Division of State History, Salt Lake City, Utah.

Lindsay, LaMar W., 1977. An Archaeological Survey of Clay Basin Daggett County, Utah. June 9, 1977.

Marwitt, John P., 1970. "Median Village and Fremont Culture Variation." University of Utah Anthropological Papers. Number 95. December, 1970. University of Utah Press, Salt Lake City, Utah.

Moffat County, Board of County Commissioners, 1978. "Revised Moffat County Zoning Resulution."

Morris, M. S., 1934. "Deferred-and-Rotation Systems at Grazing." American Cattle Producer. Volume 16(5).

Mountain Area Planners, 1973. "Daggett County Zoning Ordinance." Daggett County.

Mueggler, W. E., 1975. "Rate and Pattern of Vigor Recovery in Idaho Fescue and Bluebrunch Wheatgrass." Journal Range Management. 28(3). May 1975. Society for Range Management, Denver, Colorado.

Neese, Elizabeth, 1978. "Memo on T&E Plants found in the Vernal District." (Correspondence to Vernal District Manager). Vernal District, Vernal, Utah.

REFERENCES CITED (continued)

Northeastern Region, Utah Division of Wildlife Resources, 1979. "Habitat Condition Rating for Wildlife Species Found in the Three Corner Planning Unit." January, 1979. UDWR.

Pac, David F., 1976. "Distribution, Movements, and Habitat Use During Spring, Summer, and Fall by Mule Deer Associated With the Armstrong Winter Range, Bridger Mountains, Montana," (unpublished manuscript). Montan State University.

Pacific Southwest Inter-Agency Committee, water Management Subcommittee, 1968. "Factors Affecting Sediment Yield in the Pacific Southwest Area."

Paulsen, Harold A, Jr., 1975. Range Management in the Central and Southern Rocky Mountain--A Summary of the Status of Our Knowledge by Range Ecosystems. Research Paper RM-154. October, 1975. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station, Ft. Collins, CO. p. 34.

Pechanec, Joseph F.; Plummer, A. Perry; Robertson, Joseph H.; Hull, A. C.; 1965. Sagebrush Control on Rangelands. February 1965. U. S. Dept. of Agriculture.

Rattiff, Raymond D.; Reppert, Jack N.; McConnen, Richard J.; 1972. "Rest Rotation Grazing at Harvey Valley." U. S. Forest Service, Pacific Southwest Forest and Range Experiment Station: Berkeley, CA.

Reclamation, 1975. Salinity and Sediment Study, Upper Colorado River Basin Utah, Colorado, Wyoming. June 1975. Bureau of Reclamation, Salt Lake City, Utah. 80 pages.

Reynolds, Hudson G.; Clark, Martin S.; 1968. Managing Grass--Shrub Cattle Ranges in the Southwest. Agriculture Handbook No. 162. Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO. p. 44.

Ritzma, Howard R., 1959. Geologic Atlas of Utah--Daggett County. Bulletin 66. September 1959. Utah Geological and Mineralogical Survey, University of Utah. 116 pages.

Sanderson, Glen C., 1977. Management of Migratory Shore and Upland Game Birds in North America. 1st Edition. The International Association of Fish and Wildlife Agencies, Washington, D. C.

Siddoway, Ralph, 1978. "Lamb Crop," (personal communication with Byron Tolman). June 6, 1978.

Snow, Carol, 1972. The American peregrine Falcon and Artic Falcon. November 15, 1972. Technical Note TN-167. USDI, BLM Denver Service Center.

Soil Conservation Service, 1976. National Range Handbook. July, 13, 1976. Washington D.C.

REFERENCES CITED (continued)

Sparks, Earl A., 1974. Checklist of Utah Wild Mammals. Utah Division of Wildlife Resources.

Spencer, Donald A., 1976. Wintering of the Migrant Bald Eagle in the Lower 48 States. National Agricultural Chemicals Association. Washington, D. C.

Stoddart, Laurence A., Smith, Arthur D., 1955. Range Management. Second Edition. McGraw-Hill Book Company, Inc..

Stoddart, Lawrence A.; Smith, Arthur D.; Box, Thadis W.; 1975. Range Management. Third Edition. McGraw-Hill Book Company, New York.

Sturges, David L., 1975. Hydrologic Relations on Undisturbed and Converted Big Sagebrush Lands. Research Paper RM-140. March, 1975. U. S. Forest Service, U.S. Dept. of Agricultural, Fort Collins, CO. Rocky Mountain Forest and Range Experiment Station.

Tolman, Byron; Blacker, Rodney; Beader, Larry; 1976. "Diamond Mountain Range Survey," (unpublished manuscript). Bureau of Land Management, Richfield District. Vernal, Utah.

Tolman, Byron, 1975. "East Little Mountain Allotment Evaluation, 1975," (unpublished manuscript). Bureau of Land Management, Vernal District, Vernal, Utah.

Trlica, J., et al., 1977. "Effects of Rest Following Defoliations on the Recovery of Several Range Species." Journal of Range Management. 30(1). January, 1977. Society for Range Management, Denver, Colorado.

Tucker, Curtis, 1978. "John Jarvie Property Meets National Register Significance Criteria and May Be Nominated to the Register," (Telephone Confirmation). January 29, 1979. Bureau of Land Management, Vernal District Office.

Tucker, 1979. "John Jarvie Property," (personal communication with Curtis Tucker, Recreation Specialist, Vernal District BLM Office).

U. S. Department of the Interior, Geological Survey Water Resources Division, 1972 through 1976. Water Resources Data for Utah. U.S. Geological Survey, Salt Lake City, Utah.

U. S. Environmental Protection Agency, 1976. Quality Criteria For Water. U. S. Government, Washington, D. C.

UDWR, 1956. Big Game Range Inventory. Fish and Game Department.

UDWR, 1972. "Big Game Population Trends," personal communication with Bob Nielson, Game Manager and Robert L. Jensen, Wildlife Biologist, BLM, Vernal Distrist.

REFERENCES CITED (continued)

UDWR, 1977. "Browns Park URA," (personal communication between local conservation officers, Udell Gardiner and John Dickerson and David Zalundardo, Wildlife Biologist, BLM).

UDWR, 1978. "Predation by Big Game on Private Lands on Diamond Mountain," (personal communication with Bob Nielson, UDWR by Robert H. Jensen, BLM, Vernal District).

UDWR, 1979. "Raptor Habitat," (personal communication with Phil Wagner, Biologist, UDWR). David Zalunardo, Wildlife Biologist, Bureau of Land Management, Vernal District.

UDWR, 1979. "Wildlife Habitat Condition Rating." Northeastern Region Conservation Officers--UDWR--John Ellenberger, Colorado Game and Fish Dept.

Uintah County, Board of County Commissioners, 1971. "Uintah County Zoning Ordinance No 3-7." November 18, 1971.

USFS, 1977. "Data Summary of Proposed Endangered or Threatened Plant Species." September, 1977. U.S. Forest Service, Regional Office, Ogden, Utah.

USGS, 1978. "Annual Report--Relates to Water Quality Study."

Vallentine, John F., 1974. Range Developments and Improvements. Second Edition. Provo, Utah: Brigham Young University Press. p. 111.

Vallentine, 1977. Range Development and Improvements, Third Edition. Brigham Young University Press, Provo, Utah. p. 111.

Vernal BLM District, 1976. "Range Survey," (unpublished).

Wallested, Richard, 1975. Montana Sage Grouse.

Warren, Clark P., 1973. Flaming Gorge Reservoir Post-Empoundment Big Game Study. June 30, 1973.

Waters, Buck, 1979. "Quoting the Frest Service Eastern Regional EIS," (telephone conversation).

Welsh, Stanley L.; Atwood, N. Duane; Reveal, James L.; 1975. "Endangered, Threatened, Extinct, Endemic, and Rare or Restricted Utah Vascular Plants." Great Basin Naturalist. Vol. 35, No. 4. December 31, 1975. Brigham Young University: Provo, Utah.

Welsh, Stanley L., 1978. "Endangered and Threatened Plants of Utah--A Re-evaluation," (unpublished manuscript). BYU, Provo, Utah.

Western U.S. Water Plan, 1974. "Consumptive Water Requirements for Public Lands Administered by BLM--Working Document" (unpublished document. October, 1974. BLM.

REFERENCES CITED (concluded)

Wilson, LeMoyne; Olsen, Marvin E.; Hutchings, Theron B.; Southard, Alvin R.; Erickson, Austin J.; 1975. Soils of Utah. March 1975. Utah State University, Logan Utah.

Winegar, Harold H., 1977. "Camp Creek Channel Fencing--Plant, Wildlife, Soil, and Water Response." Rangeman's Journal. Vol. 4 No. 1. February 1977. Society for Range Management, Denver, Colorado.

Yoakum, Jim, 1967. Literature of the American Pronghorn Antelope. Bureau of Land Management, Reno, Nevada. U. S. Government Printing Office.

☆U.S. GOVERNMENT PRINTING OFFICE:1979—1802-M/46

Form 1279—3
(June 1984)

BORROWE

SF 85.35 .W47 T

Three Corners g
management

DATE LOANED	BORROWER

USDI — BLM